THE

HORTICULTURIST,

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

DEVOTED TO

HORTICULTURE, LANDSCAPE GARDENING, RURAL ARCHITECTURE, BOTANY, POMOLOGY, ENTOMOLOGY, RURAL ECONOMY, &c.

EDITED BY A. J. DOWNING,

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Original Designs for Country Churches.

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A Short Chapter on Country Churches.

WHAT, among all the edifices that compose a country town or village, is that which the inhabitants should most love and reverence,—should most respect and admire among themselves, and should feel most pleasure in showing to a stranger?

We imagine the answer ready upon the lips of every one of our readers in the country, and rising at once to utterance, is—the VILLAGE CHURCH.

And yet, are our village churches winning and attractive in their exterior and interior? Is one drawn to admire them at first sight, by the beauty of their proportions, the expression of holy purpose which they embody, the feeling of harmony with GOD and man, which they suggest? Does one get to love the very stones of which they are composed, because they so completely belong to a building, which looks and is the home of Christian worship, and stands as the type of all that is firmest and deepest in our religious faith and affections?

Alas! we fear there are very few country churches in our land that exert this kind of spell,—a spell which grows out of making stone, and brick, and timber, obey the will of the living soul, and express a religious sentiment. Most persons, most committees, selectmen, vestrymen, and congregations, who have to do with the building of churches, appear indeed, wholly to ignore the fact, that the form and features of a building may be made to express religious, civil, domestic, or a dozen other feelings, as distinctly as the form and features of the human face;—and yet this is a fact as well known by all true architects, as that joy and sorrow, pleasure and pain, are capable of irradiating or darkening the countenance. Yes, and we do not say too much, when we add, that right expression in a building for religious purposes, has as much to do with awakening devotional feelings, and begetting an attachment in the heart, as the unmistakable signs of virtue and benevolence in our fellow creatures, have in awakening kindred feeling in our own breasts.

We do not, of course, mean to say, that a beautiful rural church will make all the population about it devotional, any more than that sunshine will banish all gloom; but it is one of the influences that prepare the way for religious feeling, and which we are as unwise to neglect, as we should be to abjure the world and bury ourselves like the ancient troglodytes, in caves and caverns.

To speak out the truth boldly, would be to say that the ugliest church architecture in christendom, is at this moment to be found in the country towns and villages of the United States. Doubtless, the hatred which originally existed in the minds of Puritan ancestors, against everything that belonged to the Romish Church, including in one general sweep all beauty and all taste, along with all the superstitions and errors of what had become a corrupt system of religion, is the key to the bareness and baldness, and absence of all that is lovely to the eye in the primitive churches of New-England—which are for the most part the type-churches of all America.

But, little by little, this ultra-puritanical spirit is wearing off. Men are not now so blinded by personal feeling against great spiritual wrongs, as to identify forever, all that blessed boon of harmony, grace, proportion, symmetry and expression, which make what we call Beauty, with the vices, either real or supposed, of any particular creed. In short, as a people, our eyes are opening to the perception of influences that are good, healthful and elevating to the soul, in all ages, and all countries—and we separate the vices of men from the laws of order and beauty, by which the universe is governed.

The first step which we have taken to show our emancipation from puritanism in architecture, is that of building our churches with *porticoes*, in a kind of shabby imitation of Greek temples. This has been the prevailing taste, if it is worthy of that name, of the northern states, for the last fifteen or twenty years. The form of these churches is a parallelogram. A long row of windows, square or round-headed, and cut in two by a gallery on the inside; a clumsy portico of Doric or Ionic columns in front, and a cupola upon the top, (usually stuck in the only place where a cupola should never be—that is, directly over the pediment or portico)—such are the *chef d'œuvres* of ecclesiastical architecture, standing, in nine cases out of ten, as the rural churches of the country at large.

Now, *architecturally*, we ought not to consider these, *churches* at all. And by churches, we mean no narrow sectarian phrase—but a place where Christians worship God. Indeed, many of the congregations seem to have felt this, and contented themselves with calling them "meeting-houses." If they would go a step farther, and turn them into *town-meeting houses*—or at least would, in future, only build such edifices for town meetings, or other civil purposes, then the building and its purpose would be in good keeping, one with the other.

Not to appear presumptive and partial in our criticism, let us glance for a moment at the opposite purposes of the Grecian or classical, and the Gothic or pointed styles of architecture—as to what they really mean;—for our readers must not suppose that all architects are men who merely put together certain pretty lines and ornaments, to produce an agreeable effect and please the popular eye.

In these two styles, which have so taken root that they are employed at the present moment, all over Europe and America, there is something more than a mere conventional treatment of doors and windows;—the application of columns in one case, and the introduction of pointed arches in the other. In other words, there is an intrinsic meaning or expression involved in each, which, not to understand, or vaguely to understand, is to be working blindly, or striving after something in the dark.

The leading idea of the Greek architecture, then, is in its horizontal lines—the unbroken level of its cornice, which is the "*level line of rationality.*" In this line, in the regular division of spaces, both of columns and windows, we find the elements of order, law, and human reason, fully and completely expressed. Hence, the fitness of classical architecture for the service of the state, for the town hall, the legislative assembly, the lecture room, for intellectual or scientific debate, and in short, for all civil purposes where the reason of man is supreme. So, on the other hand, the leading idea of Gothic architecture is found in its upward lines—its aspiring tendencies. No weight of long cornices, or flat ceilings, can keep it down; upward, higher and higher, it soars, lifting every thing, even heavy, ponderous stones, poising them in the air in vaulted ceilings, or piling them upwards towards Heaven, in spires, and steeples, and towers, that, in the great cathedrals, almost seem to pierce the sky. It must be a dull soul that does not catch and feel something of this upward tendency in the vaulted aisles and high, open, pointed roofs of the interior of a fine gothic church, as well as its subdued and mellow light, and its suggestive and beautiful forms: forms too, that are rendered more touching by their associations with christian worship in so many ages, not, like the Greek edifices, by associations with heathen devotees.

Granting that the Gothic cathedral expresses, in its lofty, aspiring lines, the spirit of that true faith and devotion which leads us to look upward, is it possible, in the narrow compass of a village church which costs but a few hundred, or at most, a few thousand dollars, to preserve this idea?

We answer, yes. A drop of water is not the ocean, but it is still a type of the infinite; and a few words of wisdom may not penetrate the understanding so deeply as a great volume by a master of the human heart, but they may work miracles, if fitly spoken. For it is not the magnitude of things that is the measure of their excellence or power; and there is space enough for the architect to awaken devotional feelings, and lead the soul upward, so far as material form can aid in doing this, though in a less degree, in the little chapel that is to hold a few hundred, as in the mighty minster where thousands may assemble.

And the *cost* too, shall not be greater; that is, if a substantial building is to be erected, and not a flimsy frame of boards and plaster. Indeed, we could quote numberless instances where the sums expended in classical buildings, of false proportions but costly execution,* which can never raise other than emotions of pride in the human heart, would have built beautiful rural churches, which every inhabitant of the

* We have seen with pain, lately, one of those great temple churches erected in a country town on the Hudson, at a cost of $20,000. It looks outside and inside, no more like a church, than does the Custom House. And yet this sum would have built the most perfect of devotional edifices for that congregation.

town where they chanced to stand, would remember with feelings of respect and affection, to the end of all time.

And in truth, we would not desire to make the country church other than simple, truthful and harmonious. We would avoid all pretensions to elaborate architectural ornament; we would depend upon the right proportions, forms, outlines, and the true expression. Above all, we would have the country church rural and expressive, by placing it in a spot of green lawn, surrounding it with our beautiful natural shade trees, and decorating its *walls*, (for no church built in any but the newest settlements, where means are utterly wanting,) should be built of so perishable a material as wood)—with climbing plants—the ivy, or where that would not thrive, the Virginia creeper. And so we would make the country church, in its very forms and outlines, its walls and the vines that enwreath them, its shady green and the elms that overhang it, as well as in the lessons of goodness and piety that emanate from its pulpit, something to become a part of the affections, and touch and better the hearts of the whole country about it.

NOTES ON FOREIGN GRAPES IN THE UNITED STATES.

BY JOSEPH TOGNO, WILMINGTON, N. C.

A. J. Downing, Esq.—I have frequently referred, especially of late, to your excellent work on the Fruit Trees of America. I must confess that I have been much instructed by it; but there is one idea at page 558, I do not fully understand. I shall quote it here: "Varieties of the vine are said never to degenerate, and this is perhaps owing to their having very rarely been propagated by grafting."

My comment of this passage is—1st. That the vine degenerates, perhaps, sooner than any other plant, if neglected in any way, though it be generally propagated by cuttings, especially in Europe. I consider that owing to a sad mismanagement of this plant, almost all the European varieties cultivated in the *open field*, have degenerated in this country, because they were planted and not attended to.

The next remark I would respectfully make is, that according to the latter portion of your phrase which I have quoted, you seem to admit that grafting is a cause of degeneracy in all fruit trees. I cannot admit that under favorable circumstances, the grafting of our hardy native vines with European grafts, causes the nobler kind to degenerate. I have grafted a great many European varieties on the American wild vines, and so far, to judge by the extraordinary growth of the wood of the grafts, having their peculiar European character, there is no degeneracy to be observed; on the contrary, I never saw more healthy anywhere. They have produced some few bunches the same year, (within seven months.) Next year the fruit will enable me to speak more positively with respect to this matter.

You must know, sir, that I have established a model vineyard near Wilmington, N. C., and that I obtained last spring from Europe, more than one hundred varieties, which are now growing, and many have succeeded very well; and that being in correspondence with Mr. Le Comte Odart, proprietor of the largest collection of grape-vines in the world, (amounting to 600 varieties,) and author also, of the best work on the culture and classification of the vine, *Ampolographic* on traite des Cepages, &c.,) I expect to receive

next spring, from this gentleman, who has consecrated 40 years of his life to collect it, a splendid, choice collection, which will make mine the most extensive in America.

It is my intention to graft a great many of these varieties on our native vines, so common with us in the south, and I expect by this means to render these European varieties vastly more hardy, productive, and no less noble than the original stock. Time alone can determine whether my views of this subject are correct. Should you be possessed of any particular information on this *mother idea* of mine, you would confer a great favor on me by giving me your ideas about it. My method of grafting differs somewhat from all those described by yourself, and those which are in general practice. When experience will have *completely* confirmed it, I shall take great pleasure in communicating it to you.

In the hope of hearing from you, I remain very respectfully, JOSEPH TOGNO.

REMARKS.—We think our correspondent does not fully understand what we mean by the term *degeneration* of a variety of fruit.

By this phrase, we mean that enfeebling of a variety frequently exhibited after it has been cultivated for a great number of years. When this happens, it requires great care and the highest culture, to produce as luxuriant growth, or as fine fruit upon trees of that variety, as when it was first originated.

Now every practical cultivator knows, that there are sorts of apples and pears which come under this head—the fruit of which no longer sustains its old reputation.

As we notice nothing of this sort among grapes—the oldest varieties—like the Royal Muscadine and Black Hamburgh, or even the Burgundy—bearing in a favorable soil and climate, as good fruit, and as abundant crops as ever, we were led to say, (and we think VAN MONS has somewhere said the same thing,) that varieties of the vine do not seem to degenerate,—or grow feeble by long culture,—like other fruits.

As a proof that it is want of proper climate which alone deters us from the successful cultivation of the grape in the open air, in this country, we need only refer to the numerous vineries in the northern states, bearing every season the finest grapes, in the greatest abundance—without fire-heat—simply by the improved climate produced by regulating the temperature within, so as to avoid sudden changes, &c.

Mr. TOGNO is sanguine as to the introduction of the foreign grape in this country, for open vineyard culture. The thing is impossible. Thousands of individuals have tried it on a small scale in various parts of the Union; and several persons—as for example, M. LOUBAT, Mr. LONGWORTH, etc., of great experience abroad or knowledge at home, joined to abundant capital, have tried it on a small scale. The result in *every case* has been the same;—a season or two of promise, then utter failure, and finally complete abandonment of the theory. The only vineyards ever successful in America, are those of American grapes. As it is a pretty well established axiom, that the hardiness of a variety of tree or plant, is not affected by grafting it on a hardier stock—though its luxuriant growth may be promoted by it,—we doubt if our correspondent will find the mildew less inclined to make havoc on his foreign grapes, when worked on our wild stocks. If he really wishes to *acclimate* the foreign grape here, he must go to the *seeds*, and raise two or three new generations in the American soil and climate. They will then get American *constitutions*—which no grafting, pruning, training or manuring, will give them. The only thing that we can do for them, is to cheat them into the belief that they are in the warmer parts of Europe, by putting them in a glass house.

If any of our readers doubt whether grafting can enfeeble a healthy variety, they have only to try the experiment by taking that variety and grafting it for two or three successions upon unsuitable or unhealthy stocks. We do not mean, however, to assert that grafting

on healthy stocks impairs the vigor of a sort—but only that any given variety which has been propagated in this way time and again, for 100 years, is very likely, in the course of that time, to have been put upon an unhealthy stock, and hence to have lost some of its original vigor.

Little encouragement as we can give to Mr. TOGNO, in his plan of making vineyards of foreign grapes in this country, we look with considerable interest upon his attempt to introduce here a large collection of foreign grapes. It is by no means impossible, that some one or two varieties little known in the gardens, but better known in the vineyards of Europe, may yet be found to stand our climate—though we cannot say that such a variety has yet been found. ED.

ON THE AGE OF TREES.

(FROM THE LONDON GARDENERS' MAGAZINE OF BOTANY.)

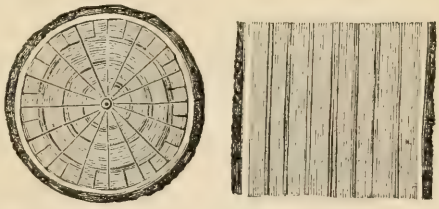
IN speaking of the age of trees, we insensibly use the term age, in the same manner as we do when speaking of animals. We talk of old trees, old animals, and old houses, as if the same processes had gone on in one as in the other. Yet, when we come to examine the nature of the changes which have taken place during the age of the one and the other, how different they are. Not more does the process of change in the old house differ from the tree and animal, than does the same process in these two. The animal has but one life, and this life is dependent on the harmony of the whole organization; whilst, if we examine a tree, we shall find it has, (so to speak,) many lives. Each bud is capable of an independent existence; nay more, many parts of the tissues of plants are capable of producing buds, and each cell has its separate and independent existence. It is here, then, that we see how different must be the circumstances under which age is attained in a tree, from those which produce it in an animal.

BEECH TREE—EXOGEN.

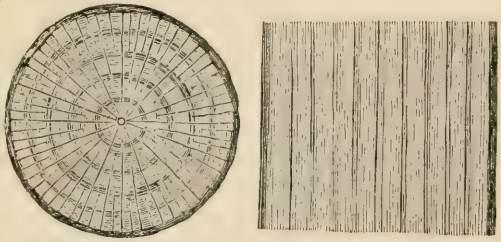
Plants are called annual, biennial, or perennial, as they endure for one, two, or more years. The difference depends on this, that the tissues of some plants are unable to resist the meteorological influences to which they are exposed, so well as others. The reason of this difference in the tissues is not well made out. It is, however, well known, that a plant in this country may be an annual, on the Continent, a biennial, and, in the Tropics, a shrub, or tree. This is the case with the castor-oil plant, *Ricinus communis*.

In perennial plants, the tissues which resist climatal change carry on a kind of low vitality, as seen in the trunks of trees, in this country, in the winter. At more favorable periods, these tissues begin to grow in certain directions; buds, and leaves, and new tissues are formed, and deposited, in various parts of the plant, more especially covering the old, and growth or increase is the consequence. Even in plants not producing leaves, this process goes on, and, year after year, new tissues are added to the old. This is especially evident in sea-weeds, which thus exist through very long periods of time. Thus, Professor Schleiden says, "On the great fucus bank of Corvo and Flores, we might yet find, floating about, plants of *Sargassum*, which had been cut in strips by the bark of Columbus; and in the northern drift, we might expect to discover Lichens that had been transported with the soil in which they grew, from Scandinavia." Nor is this conjecture at all unreasonable, from what we know of the nature of the process of growth in these plants; but we have no means, in cryptogamic plants, of accurately ascertaining the length of time they have been in growing. Nor is this possible in endogenous plants, or even in all exogens; but, in the latter, the stem presents, very generally, a series of zones, and each zone has been found to correspond with one period of vegetation. This period mostly represents a year, hence, by counting the number of zones in the trunk of an exogenous tree, we may form an estimate of the years it has existed. It is in this way that the ages of many very old trees have been arrived at. The following list of old trees has been published by Moquin-Tandon, in his *Teratologie Vegetale*, and is reproduced in the English translation of *Schleiden's Principles of Scientific Botany*. There are known,

AGAVE AMERICAN—ENDOGEN.



SECTIONS OF A STEM AS IT APPEARS IN MAY AND JUNE OF THE FIFTH YEAR. The white spaces show the swelling cambium.



SECTIONS OF A STEM AT THE END OF THE FIFTH YEAR. The envelopes and layers of liber are too thin to be shown by the pencil.

	Years.		Years.		Years.
Palms of	200, 300	Castanea (Chestnut)	360, 626	Quercus (Oak)	600, 800, 860, 1000 1600
Cereis	300	Citrus (Lemon, Orange, &c.,)	400, 509, 640	Olea (Olive)	700, 1000, 2000
Cherodendron	327	Platanus (Plane)	720	Taxus (Yew)	1214, 1466, 2588, 2880
Ulmus (Elm)	355	Cedrus (Cedar)	200, 800	Schubertia (Taxodium)	3000, 4000
Cupressus (Cypress)	388	Juglans (Walnut)	900	Leguminosæa	2052, 4104
Hedera (Ivy)	448	Tilia (Lime)	364, 530, 800, 825, 1036	Adansonia (Baobab)	6000
Acer (Maple)	516	Abies (Spruce)	1200	Draccena (Dragon Tree)	6000
Larix (Larch)	263, 576				

We might add considerably to this list, but it already supplies a sufficient number of illustrations of our general remarks.

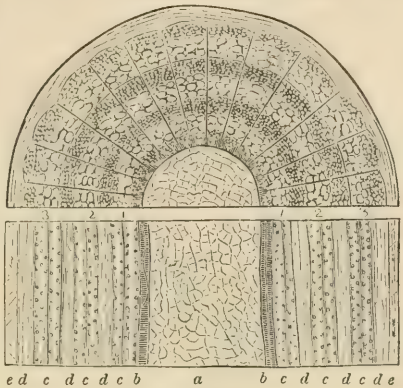
The means, by which the age of these trees has been ascertained, are two—first, from historical data, and second, from counting the zones. Thus, the colossal Dragon-tree of Oratava is known to have existed, in almost its present condition, in 1402; and comparing it with the younger trees in its neighborhood, its vast age is inferred. The Yew trees at Fountain's Abbey, in Yorkshire, are known to have sheltered the monks whilst the abbey was building. The abbey is now in ruins, but the trees retain their vigor; the lowest age that can be assigned them is twelve centuries; they are probably much more. But where trees have been cut down, the method of counting the zones has been had recourse to. There is no difficulty in this where the tree is sound; but in many instances, the older trees are, the more likely they are to be decayed in their center. The plan then adopted is, to take a square inch, count the zones in it, multiply this number by the number of inches from the bark to the pith, which will then give the whole number of zones, and the age of the tree. This was the plan adopted by Adanson in calculating the age of the Baobabs of Africa, and which has also been employed in calculating the age of other gigantic trees. The numbers, however, thus obtained, can only be looked upon as approximations to the truth, seeing that the zones of wood vary very much in thickness, not only one with the other, but in parts of the same ring.

Size is no indication of the age of a tree, as various species grow at very different rates, and the same species under different circumstances. The following table shows the different rates at which some common trees grow.

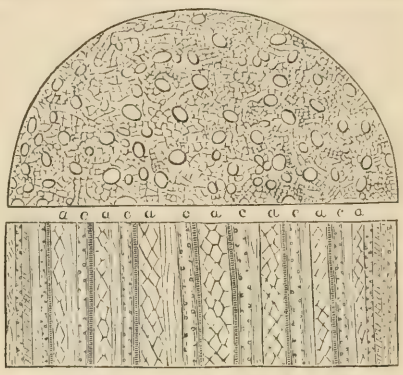
	1st Year. Ft. In.	2d Year. Ft. In.	3d Year. Ft. In.		1st Year. Ft. In.	2d Year. Ft. In.	3d Year. Ft. In.
Oak, circumference,	0 10½	0 11½	1 0½	Lombardy Poplar circum.,	1 8	2 0	2 3¾
Larch "	1 0½	1 3	1 4				
Elm "	2 7½	2 9	2 11	Lime "	1 8½	1 10¾	2 0

Some trees attain an enormous size by their rapid growth. Species of *Eucalyptus* have been measured that reached a height of 250 feet, and measured 70 feet round their trunks.

The death of trees does not appear to arise from any natural period being assigned to the existence of their living tissues, or reproductive powers. When the tissues of a tree are very old, they lose their vitality, especially in the center of the trunks of the trees; and, on being exposed to the atmosphere, or moisture, they readily decay. The process of new growth is sometimes more rapid than this decay, and thus trees exist with enormous cavities in their interior. The time, however, comes, sooner or later, when a separation takes place between the roots and branches, and then the tree ceases to exist, although the tissue that has been conveyed away from it, in the form of slips and grafts, may still continue to flourish. Thus, the old stump of the Ribstone Pippin Apple is but struggling for life in Ribstone Park, while the slips from its branches adorn a thousand orchards, and supply the thousands upon thousands of bushels of Ribstone Pippin Apples that are annually consumed.



HORIZONTAL OR TRANSVERSE AND PERPENDICULAR SECTION, OF THE STEM OF AN EXOGEN OF THREE YEAR'S GROWTH. In the center of each is seen the pith, *a*, composed of cellular tissue; surrounding it is the medullary sheath, *b*; and exterior to it are three rings of wood, each consisting of *c*, *c*, dotted ducts, and *d*, *d*, woody fibre. The last formed is in contact with the bark, *e*, *e*, in which the layers are indistinct. *Carpenter's Vegetable Physiology.*



HORIZONTAL AND VERTICAL SECTION OF THE STEM OF AN ENDOGEN, showing the bundles of ducts, woody fibre, and spiral vessels, irregularly disposed through the whole stem. *a*, *a*, portions of cellular tissue; *b*, *b*, spiral vessels; *c*, *c*, dotted ducts; *d*, *d*, woody fibre. The cellular portion of the skin, which in *Exogens* is separated by the first introduction of wood into pith and bark, here remains permanently intermingled with it.

[The accompanying engravings, representing sections of Exogen and Endogen, will explain themselves. The number of zones in trees will probably give a tolerable approximation to the years of growth in temperate climates; but even here, two may be formed in one year, if any great check of the growth suddenly occurs during the summer. In tropical climates the indication is far more doubtful; Adanson's computation, made in this way, carried the age of the Baobabs to from 5000 to 6000 years. It has been stated that monthly rings are formed in the tropics of South America, (*Hopkins' Researches in Magnetism.*) Some plants, such as the Cacti and Cycadeæ, require more than one year for the formation of a zone of wood.]

CHEAP VINERIES AND GREEN-HOUSES.

NOT a few of those who dabble in horticulture in various parts of the country, would be glad to borrow the assistance of a little glass in raising a good crop of foreign grapes, a few green-house plants, or the like, but are prevented by the *cost* of the thing in the ordinary way. If they talk to the carpenter about even a small "green-house," say 20 or 30 feet long, he gives them an estimate of some 300 or 400 dollars—and as this is more than they can rightly afford, they let the matter drop.

Some mode, then, is wanted by persons of moderate means, of putting up a building of a simple and cheaper description—call it what you please—for it will aim to be useful—not ornamental—some plan that will enable us to get as fine foreign fruits, grapes, figs, &c., or as healthy and beautiful plants, as the most costly building, glazed with the best plate glass.

Such buildings as these have rarely been put up in this country—though there are occasional examples in the premises of some of the market florists about our cities. We have already spoken, (p. 184, v. 5.) of large ranges of this kind, which we saw last summer in the nurseries of Mr. RIVERS, Sawbridgeworth, England. In these buildings, put up at less than half the cost of ordinary green-houses, we saw plants of all kinds, and fruits of various sorts, all in the highest possible health and productiveness.

In fig. 1, we give a sketch of a section of one of these cheap structures, from which any of our readers may construct a similar house.

The frame of this building is wholly of wood. Posts are set into the ground about six feet apart. These posts rise seven feet above the surface at the rear, (A.) and two feet three inches at the front, (B.) They are sheathed or weather-boarded in the common way, on the outside of the posts,* along the back and front—the two ends being also boarded up—with a door in each or in both ends—opposite the sunken walk, (C.) This walk is sunken, partly to economise cost, and is needed to raise the back and front high enough to walk under the roof, and partly to bring the plants as near the glass as possible—a great desideratum in all plant culture.

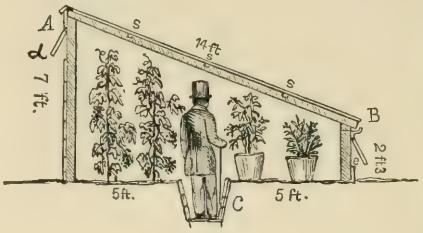


Fig. 1.

So far, it will be seen that this structure costs little more than a board fence. Now let us examine the glass roof, for it is here that the cost usually lies. And as this cost is not so much in the glass, as in the sliding sashes, all nicely jointed and framed, and the grooved rafters in which they are to slide, Mr. RIVERS has cut loose from the whole system of sashes, and made the entire roof one fixture. Ventilation, which is not to be dispensed with, he provides for in a much more effectual manner than the common one, by having boards, *d*, *e*, both at the front and rear—(either at intervals, or along the whole line, as may be needful,) hung upon hinges, so as to open outwards, and permit a stream of air to pass over through the breadth of the whole house.

To construct the roof, a strip of timber—what is usually called a wale strip—is laid along the top of the front and back parts to form a "plate." To this plate are nailed the rafter pieces, about five or six feet apart. Across these rafter pieces, light strips, i. e. *s*, *s*, *s*, about two inches, by one inch, are let in on a level with the top of the rafter. Then, along the whole length of the roof, in the direction of the rafters, light strips are nailed to the bearers, *s*, *s*, *s*. These strips are *rebated* on the top like a common sash-bar, and are of course laid upon the roof just far enough apart to receive the glass—say 7 inches, (if 7 by 9 glass is to be used.) No *framing* of sashes is necessary, and when the whole is glazed, it is light, strong and durable, and is put together so easily, that a house 30 or 40 feet long, can be built very quickly. The strips that make the sash bars are both sawn and rebated at the saw-mill;† and as many of Mr. R.'s houses are built of rough stuff, left unplaned, and coated over with ship-varnish instead of paint, the construction is reduced to the minimum of simplicity and expense. The house we show a section of in fig. 1, is used as an early forcing house for grapes and other fruits, and the grapes are grown upright in an inside border on one side of the walk, while the other side is occupied with fruit trees—peaches, nectarines and figs, in pots laden with fruit.

For this climate, a variation of this cheap structure would be very useful as a vinery without fire heat. In this case the border should be made *outside* of the front wall, (B.) the vines brought under the boarding and trained up under the glass, about 8 inches below the glass, from front to rear. The sunken walk could then be dispensed with, as there

* If for a vinery or a house to be used in summer, this would be sufficient; if for a green-house, then the posts should be boarded up on both sides and the space between filled-in with tan, pounded clay, or anything usually employed for this purpose.

† We have machines in this country that saw, rebate, and plane these strips at once.

would be height enough along the back wall—which is 7 feet high, for a person to walk erect. Such a house would make a capital cold-vinery at very trifling cost; or if an early vinery was desired, then by making the border inside to occupy the whole space, and by putting in one of the heaters which we shall now describe, the structure would answer equally well for that purpose. We believe it is Mr. RIVERS' impression, that vines planted in the way shown in fig. 1, and trained to upright stakes, will produce a larger crop of fruit in a given space than if fewer vines are planted, and trained in the ordinary mode under the roof—but of this point we do not feel assured—while we do feel certain that they will require more careful feeding to prevent their exhausting the soil.

Mr. RIVERS heats all his cheap pits, green-houses and structures of this kind, with a very simple looking little affair, which he calls a "*brick-Arnott's Stove.*" This stove stands in the middle of the house, in a small space left for it there, so that it faces the sunken walk, and it is fed with fuel, (coal,) from this walk. It is only a small mass of brick work about 20 inches square and 3 feet high—the front looking like fig. 2. On opening the cast iron door, *a*, you see a small chamber about 10 inches square, with a grate at the bottom in which the fire is made. The other door, *b*, opens to the ash-pit, of the same size or a little deeper, below the fire. In this ash-pit door is a very small hole to admit the air needful for combustion, and as the Arnott's stove appears to be much upon the principle of our air tight stoves, it consumes but a few handfuls of fuel in the course of 24 hours. On the other hand, as there are two thicknesses of brick, (the inner one fire-brick,) all round the fire, the heat given out is so gradual that the plants are not at all injured, as they often are by our common iron stoves, when standing near the plants. Of course there is a flue running back into a small chimney in the back wall to carry off the smoke—just as in our common stoves.

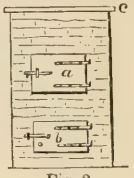


Fig. 2.

This brick-stove, in its common form, is merely covered with a thick cast iron plate, *c*. But when a higher and a more uniform temperature is needed than that of an ordinary green-house, Mr. RIVERS adds to his brick-stove a cast iron boiler, fig. 3. This boiler is cast in one piece with the exception of the pipes, which are wrought iron, and screw on. It costs in England 30 shillings, (about $7.50,) and is set within the brick-stove directly over the fire chamber, so that its bottom is on a line with the top of the door, *a*, fig. 2, and its top is covered by the iron plate *c*. As the water in this boiler becomes heated, it rises and flows through the pipe, *e*, which is run to one end or quite round the house, and returns, entering the boiler again near its bottom, *f*. As the boiler is tight, the water, of course, makes the circuit of the whole pipe, and keeps up a constant circulation. The whole pipe, which rises but a few inches in its course, may thus be considered a boiler—the only opening to which is at the highest point of the pipe, *e*—that is to say, half way round the house—where there is an opening with a small reservoir for supplying it with water. This is the simplest of all apparatus for heating by hot water, and, in conjunction with the brick-stove, will heat such a house to any desired temperature.

Fig. 3.

DESCRIPTIONS OF NEW OR RARE FRUITS.

I. The Great Bigarreau. This, unquestionably the largest and most beautiful of all cherries, appears to be scarcely at all known to pomologists. A foreign variety, perhaps more distinct than any other large cherry in its foliage, growth, and in the size, excellence, and color of its fruit,—which is equal to the Black Tartarian in flavor, and surpasses it in beauty and productiveness, certainly should not be unknown to American pomologists. And yet we cannot identify it with anything known or described in the English, French or American books on fruits.

The only tree known to us of the Great Bigarreau, (a name we have adopted temporarily, until the real name is discovered,) is one of pretty large size, upon the premises of Mr. Lindley M. Ferris, nurseryman, Coldenham, Orange county, N. Y. Mr. Ferris first astonished us by bringing branches of this tree in full, laden with superb fruit, 2 years ago—supposing we should be able to identify it with some foreign variety, we made a drawing and description of it at the time, and waited to make further research on the subject. So far, our labor for two seasons to identify it with any other sort, has been in vain, and we now publish the description, to introduce what we think the most magnificent of cherries, to the notice of our fruit growers, and partly with the hope that some of our pomological readers in France may be able to recognise and give us its true name.*

The Great Bigarreau.

The Colden estate, which Mr. Ferris now holds, has some valuable sorts of foreign fruits upon it; and among a number of trees imported from France about 20 years ago, were this and several other cherries—including the Belle de Choisy. No labels or invoices having been left, all record of the sorts was lost. But the trees have grown finely, and this one in particular has formed a large and luxuriant head, and for several years has been annually loaded with large crops of fruit.

As a young tree, the Great Bigarreau is remarkable for its very upright growth, with very few side branches. The foliage is also very distinct from that of either the Tartarian or the light colored Bigarreaus, by being unusually *long* as well as large—much larger indeed, than the leaf of any other cherry known to us.

The tree is usually a great bearer, producing heavier crops than the Tartarian, and nothing can well be more beautiful than its branches laden with clusters of very large cherries, much ruddier and lighter in color than the fruit of the Black Tartarian—something in color between red and black.

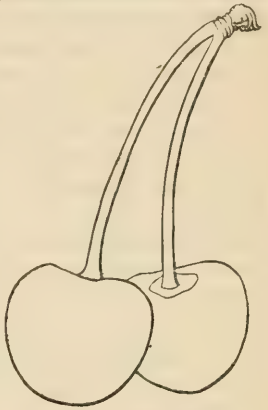
The following is its pomological character. Fruit very large—considerably larger than the Black Tartarian, which it most nearly resembles in flavor, texture of the flesh and general appearance, though it differs in color, size and form—the form being an oblong

* We believe trees of the Great Bigarreau have been propagated for sale in the nurseries of Mr. Ferris, at Coldenham, and our neighbors, Mr. C. Downing, and Messrs. Saul & Co., of Newburgh.

heart-shape—*high shouldered*, and not irregular in outline like the Tartarian. Skin beautiful deep red, becoming nearly black at maturity. Stalk thick, rather short, swollen at both ends, and set in a deep cavity. Flesh, in texture, juiciness and flavor, very much like and fully equal to the Black Tartarian. Tree very luxuriant, foliage very long and large. Ripens with the Tartarian, or a few days later.

We have only to add that when we first saw this cherry in bearing, we supposed it would prove identical with the Great Bigarreau de Mezel, a French cherry described in a previous vol. of this Journal. But a comparison of the foliage and growth of the young trees of both varieties in the same soil, the past season, has proved that the two are quite distinct. We can only say, therefore, that the Great Bigarreau is a very distinct and a very superb foreign cherry, which succeeds admirably here, and must become a great favorite in fruit gardens.

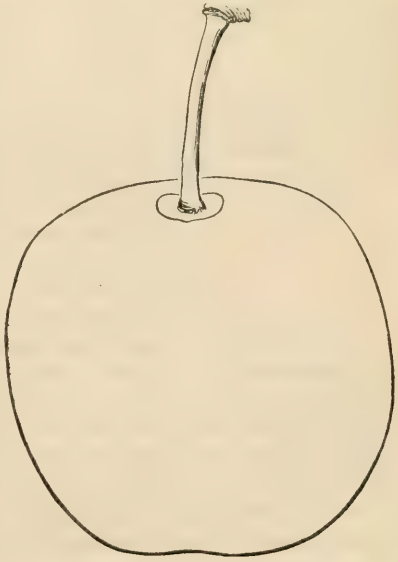
II. Roberts' Red Heart Cherry. This American variety originated in the garden of Mr. Roberts, of Salem, Mass., and was first brought into notice by the late Robert Manning, Esq., of Salem. A short account of it was published in our work on Fruits, but as we were not then fully aware of its merits, we will now add a few words more in its favor.



Roberts' Red Heart Cherry.

This is not a fruit conspicuous by either size or beauty. But it has sterling qualities nevertheless. It is of excellent flavor, bears most abundantly and unfailingly, and is neither affected by rainy or unfavorable seasons, which destroy so many other fine cherries. It hangs a long time on the tree after maturity, and the flavor is particularly agreeable to those who relish something more lively and sprightly than the honied sweetness of most of the heart cherries—by a fine mingling of sugar and acid. Its lateness and excellence, joined to the great hardiness of the tree, commend it as an invaluable fruit for family use.

III. The General Hand Plum. We think this may be called the largest yellow plum known—certainly the largest native variety. Its history is obscure, but we believe it was originated somewhere in Maryland. The first trees were, we believe, sent out from the nursery of Messrs. Sinclair, of Baltimore, a number of years ago, but the variety is still very little known to cultivators.



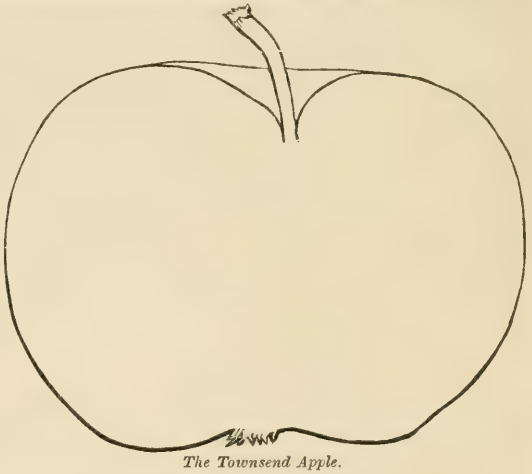
We first received specimens of it from Mr. Eli Parry, of Lancaster, Pa., and noticed them very briefly in the Hort. for 1848. The only accurate account published of this fruit, by any reliable practical cultivator, is contained in a note from Mr. A. Fahnestock, of Lancaster, Ohio, in the Horticulturist, vol. III, p. 332, in which he says, "from the fruiting of this tree, for *eight years past*, and general observation—(though the location is a bad one,) I am induced to call it one of the most

valuable plums, on account of its never having failed to bear a full crop, and its maturing its fruit perfectly. I admit that it is not so finely flavored as the Washington."

Our own opinion of this plum is, that it is simply a *good* fruit, not of high flavor, but so large, handsome and productive, that it will become a favorite for market cultivation.

Fruit very large, roundish oval, regularly formed, with an obscure suture running half round, and terminating at the top in a small scarred point—the remains of the old style. Skin smooth, deep golden yellow, slightly marbled with greenish yellow. Stalk unusually long, moderately stout, set in a very small shallow cavity—the whole of that end of the fruit being rather flattened. Flesh pale yellow, moderately juicy, sweet and good, though not of high flavor. It parts freely from the stone, which is ovate, light colored, and small for so large a fruit. Branches nearly smooth, leaves large and long, with long foot-stalks. Ripens the first week in September.

IV. The Townsend Apple. One of the most delicious late summer and early autumn apples. It has borne abundantly in our own garden, and has not, so far as we are aware, yet been described. Grafts were sent to us some years ago under this name, by a friend in Pennsylvania, as having been taken from a tree which sprung up on the site of an Indian clearing in that state. To our own taste, it has no superior among tender, delicate dessert apples of its season.



The Townsend Apple.

Fruit of medium size, roundish and usually flattened, smooth and regularly formed. Skin very pale yellow, splashed and streaked with purple-red, and covered with a dense white bloom, (like the Astrachan.) Stalk nearly an inch long, slender, inserted in a deep cavity; calyx wooly, set in a basin of moderate depth. Flesh white, fine-grained, remarkably tender, and of very mild and agreeable sub-acid flavor. Tree, a moderately luxuriant grower and abundant bearer. Season, middle of August to middle of September.

NOTE ON LYSAMACHIA STRICTA.

BY A. W. CORSON, PA.

About twenty years ago I found some specimens of *Lysamachia stricta* on the banks of the Schuylkill, and not having before seen it in Pennsylvania, I took them up and planted them in my garden, where they flourished and died without producing seed. I regreted the loss, but was surprised the following year to find several plants of the same kind, upon which, when examining them for seed, I found none, but observed a number of small bulbs formed in the axils of the leaves, which at the death of the plants fell to the ground and continued to grow through the winter, and rooting in the soil produced plants the next season. This manner of reproduction from the fallen bulbs has been continued

every year from that time to the present—care having been annually taken to leave a space about two feet square for the growth of the plants from the bulbs. It has been interesting to me to observe from time to time, the growth of the small bulbs lying on the ground, increasing from about a quarter of an inch to near or quite an inch in length during the winter season. The soil in which they were planted I suppose to have been so unsuited to their nature as to prevent the production of seed, and they were obliged to call into operation the additional power of their nature given to prevent the extinction of the species.

But the reproduction from bulbs is not rare. During the past season a singular extension of power was shown; there were but few plants permitted to grow, and I examined them for bulbs at what I thought the usual season, and found none, but continuing to examine occasionally, I found a few bulbs on some of the plants, of smaller size and later in the season as I thought, although I may have been mistaken—but on two of the plants there were no bulbs, and on one of these, late in the season—when the others were entirely dead, and of this one the top was entirely dead to within two inches of the ground, I discovered three buds on the living part, perhaps half an inch apart, and on different sides of the stalk; these buds differed in form from a common bud, producing a branch, and also from the common bulb—being of a conical form, about half an inch in length, and about as large at the base as the stalk to which they were attached, and resembling the spur of the common dunghill cock; this singular growth, originating in the decaying stalk of an annual plant, I regarded as being unusual, and upon examining them a few days after, I found one of the buds lying upon the ground, apparently prepared to form a new plant, as the bulbs have hitherto done; and upon re-examination a few days after, although it still differed much in appearance from the bulbs around it, yet there remained no doubt that its office was the same, and if not destroyed, that it will become a perfect plant, showing the care of the Creator in providing the means to prevent any species from being lost.

A. W. Corson.

Montgomery County, Pa., 11 *mo.* 27, 1850.

THE ESSENCE OF THE FINE ARTS.

BY S. H.

[We find the following interesting article in a late number of that useful serial, the London *Builder*, and transfer it to our columns for the gratification of our readers.]

My endeavor in the following remarks is to sketch a theory of art generally, which I attempt under the conviction that some of its branches are not fully appreciated even by those who take an interest in its manifestations. By a large proportion of educated persons, the arts of painting and sculpture are classed among mere amusements, or hobbies, and considered only as vehicles for the display of talent, affording at the most a refined species of pleasure to the observer. Of architecture they have no idea as one of the means of intellectual enjoyment and improvement to man. They see nothing in it but brick or stone, and wood, formed and arranged to serve certain purposes of utility, presenting at the farthest a clue to the condition, as to wealth or station, of the occupant of the structure. Very few, I apprehend, think of art as an influence to move the heart, or suppose it has functions to perform, and ends to fulfil, in any way connected with the moral sense and intellectual progress of mankind.

This has, I suspect, been a result of the excessive commercial development of our country; and it is perhaps natural, until the general mind becomes fully awake to the impor-

tance of art-culture, that it should lean most to those mechanical, commercial, and other sciences, which have mainly contributed to our national importance.

But true greatness in a people must arise from the cultivation of all the faculties of the mind. It takes both "the beautiful and the useful to form a man;" the mind, like the body, must grow in all directions;—the moral, intellectual and imaginative faculties being alike developed. We must cultivate the entire man, and bring ourselves in contact with the universe in every possible point; and not only endeavor to expand our own natures, but introduce the principle into every system of education: so that all may enjoy, not a partial, but as far as practicable, a complete and universal culture.

It appears probable that a much greater uniformity in education existed among the classic ancients, when we consider how equal was their encouragement of the different branches of intellectual pursuit. In Greece we perceive that not only literature, philosophy and science, but the fine arts were carried to the highest point of perfection. This, the multitude of exquisite monuments of art still existing, fully attests. The brilliant period from Homer to Alexander was characterised by this uniform mental pursuit. Learning and literary composition—every species of philosophy—eloquence—the art of war—are known to have arrived at the highest degree of perfection, and yet were not in advance of sculpture and architecture; illustrated at this time by the chisel of Phidias. In fine, the whole circle of arts and sciences may be said to have disputed for pre-eminence with each other. We may apply the same remark to the Romans in the reigns of Augustus and Adrian. At the same time, the art they cultivated was not *fine* art only. The aqueducts, bridges and cloacæ of the latter people have been the models of the grandest works of a similar nature in modern Europe.

On the relative importance of art,—its rank among the various branches of human pursuit, I will content myself by quoting a celebrated living writer:—"There are two avenues from the little passions and drear calamities of earth, both lead towards Heaven and away from Hell—art and science; but art is more godlike than science; science discovers,—art creates. The astronomer who catalogues the stars cannot add one atom to the universe. The poet can call a universe from the atom. The chemist may heal with his drugs the infirmities of the human form: the painter or sculptor fixes into everlasting youth, forms divine, which no disease can ravage, and no years impair."

Schiller, in his philosophical and æsthetic letters, insists upon the necessity of æsthetic as a preparation and foundation for moral culture, and considers that until we are so developed, we cannot be morally free, and, by consequence, not responsible, as the will has no sphere in which to operate. And Sir Joshua Reynolds, even in his day, considered an establishment for such culture as a subordinate school of morality. He contended that it was necessary to the happiness of mankind and security of society, that the mind should be elevated to the idea of general beauty, as a mean of giving it its proper superiority over the common scenes and temptations of life.

The Platonists looked upon the cultivation of the understanding, by the study of science, as no less necessary than the practice of virtue, to qualify a human soul for the enjoyment of a future state; and Plato himself has called mathematical demonstrations the cathartics of the soul, as being the most proper means to free it from error, and give it a relish for truth. May not, I would ask, a cultivation of the sense of beauty be deemed a more appropriate means to this end? Real works of art should be the most intimate companions of the soul: the man to whom they are mute, to whom they reveal nothing, will learn little of a moral or spiritual nature from books, and must have but faint notions of his connection with external nature,—of his relation to the universe.

I know there are persons so absorbed in the ordinary business of life, that this would sound in their ears like an unkown tongue. There are not wanting men, slaves of utility, who would crush every emotion of the heart as weakness, and quench every spark of imagination. They admire the powers and faculties that, in the present state of society, most rapidly lead to wealth, and despise those which have been the brightest glory of our race, and the chief spur of civilization. Such persons will, however, in common with others, look back with admiration and pride at the great achievements of men in the past history of the world, and particularly of their own countrymen; forgetting that from these very faculties they affect to despise, have chiefly resulted all that dazzles in the past, or in the present possesses any real dignity or importance. We feel the limits of the human understanding, and, the more profound our researches in philosophy, the more palpably we experience it. We see the boundary-line beyond which our minds cannot penetrate; but we are, at the same time, conscious of a void beyond that limit, which superior intelligence might penetrate. It is by the creative faculties that this is to be filled up; hence their advantage over reason. The imagination, swifter than the wings of the morning, transports us through the universe. The reason is limited, but the imagination is boundless. By it we approach the Infinite and are linked to the Divinity. It is to other than reason that the heroic deeds of those great spirits who have created epochs in chronology are to be ascribed. The great wonders of the ancient world were not the result of reason. The greatness of man is most apparent when he works from the feelings—his power over his fellows more complete when he holds them by the chords of the heart and imagination.

The Arts, which will be treated upon in the following paper, are those of Architecture, Painting, Sculptor, Poetry, Music; the latter two will be occasionally referred to, but my attention will be chiefly given to the three former. To form the genealogical tree of art, my course will be to trace its essence or principle—the beautiful—from its source; which will divide the subject into three distinct branches:—there are three realms of the beautiful, viz: Nature; the Human Mind, or Imagination; and Art itself.

On the first head little need be said. The most interesting of the three kingdoms of Nature is the animal: the highest species of beauty is to be found in that department. The human form and face divine,—the index of the character and passions,—is the chief subject involved in the style called historic, the highest walk of art. The beauty exhibited by the other creatures of God is various, but harmonious. Among the savage tribes of the forest, in the depth of the sea, in the regions of the air, beauty reigns and rules in every mood:—all is animated grace. What beauty is renewed to us every morning! The eastern sky is a flood of glory, and the morning dew sprinkles the earth with diamonds. The glory is repeated in the evening, but is only a prelude—a mere earthly pageant—to the more glorious exhibition of the starry firmament—

> "When the heavens
> Are thronged with constellations, and the sea
> Strewn with their images."

This is the sublimest picture, the highest class of art, in the gallery of inanimate nature. Philosophy has no power equal to these luminaries of night, these monitors of the sky, to elevate the heart above the cares and anxieties of life.

Beauty is to be found in nature in all seasons; it is not the nymph of the summer, but the goddess of the year. From green-robed Spring, whose voice,

> "More sweet than softest touch of Doric reed,
> Or Lydian Flute, can soothe the maddening winds,"

to Autumn, clad in the hues of the rainbow: nor beneath Winter's snowy mantle and icy zone is it altogether concealed.

But the theme is endless: it is vain to enter into detals: in the most insignificant objects of nature we find the traces of the beautiful. What delightful curves in leaves, shells, grasses! What exquisite harmony of color also in some of the most ordinary plants and flowers! in the plumage of the feathered tribe! seeming a link between earthly and ethereal creatures; beauties greater and more numerous than appear to the common observer; beauties that only the artist can rightly appreciate; for the eye requires training and practice to see fully the beauties of creation. How wonderful, again, is the effect of motion upon all! What elegance in the movements of some animals, particularly of the human form. A charm ever new and inexhaustible. Beauty is but half developed when at rest: Æneas, in Virgil, knew Venus to be a goddess at first sight, but only discovered her to be the goddess of beauty when she moved:—

"And by her graceful walk, the queen of love is known."

Motion generally is expressive or suggestive of beauty:—

"Thou canst not wave thy staff in the air,
Or dip thy paddle in the lake,
But it forms the bow of beauty there,
And the ripples in rhymes the oar forsake."

After a survey of the glories of creation, the thought that first suggests itself to a reflective mind is the general indifference of mankind to it. The beautiful in nature, like the beautiful in art, has too few, and among these, too many lukewarm worshippers. For too many, nature may be said to waste its loveliness on the desert air. Beauty is above, around, and beneath us, and we do not heed it. We tread on beauty and know it not. Many are born, live, and pass away, with scarce a glance on the beautiful world in which they live. There are many fossils, plants, and other works of nature, that we scarcely notice, or at best with indifference, which, if they were produced by art, would be preserved as treasures, and admired without bounds. We think little of nature's beauties, perhaps, from their being so commonly about us. How often do we find men who would stand in apparent rapture before a painted landscape, that would pass the original with indifference; and be unmoved by the sublimest effect of sunshine and shadow when presented by nature! Showing, however, that it was a conventional, rather than a true and genuine feeling for the beautiful, by which they were excited. How often do we find the physiologist in extacies with the scientific beauty of a subject, while utterly heedless of the charms that address him through the medium of form! The botanist, also, whilst busy defining and classifying, too frequently loses some part of his enjoyment, by by the non-contemplation of the æsthetic, along with the structural grace; forgetting the marriage of beauty and science; forgetting that nature speaks through these creatures to the eye and the heart, as well as to the reason and intellect, by their transcendant beauty of form and color. At the same time it must be granted that the pleasure of the artist would be enhanced by the scientific knowledge of fitness,—adaptation of means to end,—and the union of the various parts to the accomplishment of the contemplated result, which natural objects exhibit. Like poetry and music, the æsthetic and scientific beauties of objects may be said to stimulate each other, raise the thoughts, and enhance the pleasure of the spectator.

In truly great minds, however, in all ages of the world, there has existed a deep-rooted love and veneration of nature. Milton considered it "an injury and sullenness against nature, not to go out and see her riches, and partake of her rejoicings with heaven and earth." "Here," exclaims an old English poet, in reference to woods—"Here is the true Parnassus, Castalia, and the Muses." And so charmed were the classic poets, with the

natural shade of trees, that they gave to temples the names of groves. In the vistas and shades of trees, poets have composed verses which animated their countrymen to heroic and glorious actions. Here orators have delivered their discourses, and the profoundest philosophers have been so enamoured of nature's beauties as to be content to pass their lives in her bosom, in repose and contemplation. Among the luminaries of the middle ages, how prized must have been flowers, since we find them named after whatever was most valued. Nature is the great storehouse of art, and in the infancy of the latter, and prior to the refined pleasures which art affords, being extensively diffused among any country or people, the innate love of the beautiful would, of course, be more concentrated upon nature. Accordingly, in the early period of mankind, as also in the infancy of different states, large use was made of beautiful natural objects in seasons of festivity, as emblems of happiness and rejoicing. "Let us crown ourselves," says the author of the Book of Wisdom, "with rose-buds and flowers before they wither." Early nations in all their ceremonies, whether of the banquet, the altar, or the tomb, made large use of flowers as decorations. Among the classical ancients, the wreath of the victor, and other rewards of merit, were arboraceous, and this led to their extensive employment, as symbols, in architectural decorations.

I come now to the second branch of my subject, viz:—the beautiful in the Human Mind or Imagination.

"Every star in Heaven," says Emerson, "is disconcerted and insatiable; gravitation and chemistry cannot content them; ever they woo and court the eye of every beholder; every man that comes into the world they seek to fascinate and possess,—to pass into his mind, for they desire to republish themselves in a more delicate world than that they occupy. It is not enough that they are Jove, Mars, Orion, and the North star, in the gravitating firmament; they would have such poets as Newton, Herschell, and Laplace, that they may re-exist in the finer world of rational souls, and fill that realm with their fame. These beautiful basilisks set their brute, glorious eyes, on the eye of every child, and, if they can, cause their natures to pass through his wondering eyes into him, and so all things are mixed." And so through the wondering eyes of every man, all external objects seek to pass. The aspect of nature operates insensibly upon the soul of every rational creature in proportion to his natural susceptibility, and the images reflected there, whilst modified by the original disposition and current of his being, become invigorated by his intellectual power, and enriched by the stream of education. Impressions and influences operate also from other sources, until his mind becomes

> "A mansion for all lovely forms,
> His memory a dwelling place
> For all sweet sounds and harmonies."

A feeling, more or less, of the beatiful in nature, is common to all, but only the artist, who from superior intellectual power, and greater strength of imagination, has a fresher, deeper insight into the inexhaustible life around, possesses the capacity to form his ideal, and give it expression. All have the æsthetic feeling, which means sensitiveness, or susceptibility of the impress or influence of the beautiful and poetic, but few have the creative power which belongs to the artist, viz: the faculty for reproducing and embodying the feeling in some form of art,—a picture, a statue, a building, or a poem. This is what is properly termed genius, than which there is perhaps nothing more difficult to define. It has been said to consist of a refined love of nature, "a love of the flower and perfection of things, and a desire to draw a new picture, or copy of the same." Sir Joshua Reynolds must be considered incorrect when he speaks of the imagination as being a lower

faculty than reason; for the creative faculty is certainly beyond those which merely perceive and compare. It is the chief part of genius,—genius, to which all creation administers. To its sleepless eye lies open all the human heart, and all the stores of nature. A frequenter of the highways and thoroughfares of life, the man of genius, whether poet, or painter, or architect, is a watcher of events, "the votary of circumstance:" alive to every influence of nature, awake to the varied and complicated truths of existence, he lives with more than life about him; and the difference between the mind of the artist or poet and ordinary minds is this,—to the latter, the model, theme, subject, or whatever else the groundwork may be called on which the material expressions of genius are founded, appears or sounds in simple unconnectedness, unsuggested and unsuggesting, and exciting no further sensations than are contained within its known limits; but to the true artist it is the type of a past revelation, or the symbol of something intuitively foreseen. It is a point in an infinite series, coming down from the past, and leading off to the future in an interminable perspective. And thus he to whom is given "the vision and the faculty divine," sees or hears in his subject that which, till he has materially realised it, is to other men invisible,—inaudible. The truest, subtlest alchymy is his who, from seeming dross, works the true metal of undying thought.

Genius, however, is not always a producer: there are those who are recipients of the tide of inspiration from nature, and yet yield no fruit to the storehouse of Art. They form and nurture their ideal but for their own solace and delight. Dissatisfied with human power of execution, and free, perchance, from "that last infirmity of noble minds," they build only in the region of dream-land, and shrink from all material realization of their works, lest they should betray the grandeur of their subject. They are what a French writer calls the "virgins of the mind," who "die without leaving any trace of themselves behind them upon earth."

The beauty existing in the mind is higher in degree than that in either of the other realms of the beautiful:—It may be considered as superior to nature, as no individual, however beautiful was its archetype; and it is superior to that in Art, as no power of execution can do justice to the conceptions of genius. It is superior both to its antetype and to the image through which it is expressed: the eye never saw it in nature, nor, as I shall by and by endeavor to show, has the hand embodied it in Art. It is neither copied from a beautiful individual, nor compounded of the faultless features of a species, "create of every creature's best." No beauty was ever so formed, either in the mind or in Art. The mind operated upon and inspired by the general beauty of nature, has become pregnant with a new beauty, greater than all. By what steps the process was conducted we can no more explain than we can the production of some vivid dream of the night from dull waking thoughts and incidents. The ideal of landscape Art is also in advance of nature; every plant, flower, and herb has its Venus or Apollo of ideal beauty: nature's general beauty has inspired and suggested a beauty beyond the individual, and ideas may be formed, and have been formed, of various inanimate objects, which perhaps no individual ever has reached, or ever will.

One object, perhaps, kindled it at first, but by constant study and observation—by catching nature in her highest moments—in her happiest moods—and fixing on marble or canvas the most fleeting beauties, it was corrected and improved. An artist once told me, that after he had placed the model in the finest position he could think of for exhibiting the beauty and grace of the figure, by an accidental movement, he (the model) has himself immediately gone into one infinitely finer, and which he, (the artist,) could never have imagined nor dreampt of. This he has no sooner fixed on his canvas, than a slight

and partial movement of some limb has developed a new beauty. Grace is beauty in motion, and the motion of animals, as well as of man, is constantly revealing new beauties to the eye of the delighted artist.

Thus is the ideal generated, nothwithstanding the fact that natural beauty of form is dependant on fixed and determinate scientific principles, which are alike applicable to all the arts of design, and which it is the duty of the artist to investigate and study. It is a fact that, by the application of certain rules of proportion, beauty of form is produced in each art, and that the beauty of the face and figure of the Apollo is governed by precisely the same principles that reign in the temples of the Acropolis. This is a truth, however, that does not, what some writers have supposed, set aside the theory of the ideal. It is but a dead beauty that can be produced by rule. Expression is its soul and life, and this cannot be given by rule. We may point out the more prominent effect of the various passions upon the human countenance; but to communicate to marble the light, the glow, the shade of thought, the reflection of the soul on the human face, is the work of genius. The province not of rule, but of intuitive feeling. It is as true in art as in religion, that the letter killeth, the spirit giveth life.

CULTIVATION OF PEARS ON THE QUINCE.

BY S. B. PARSONS, FLUSHING, L. I.

There are few modes of culture that have made more rapid progress in the United States, than that of the pear upon the quince stock. Ten years ago these dwarf pears, were found in very few gardens, and then only as specimens valuable for their novelty. They were even, until a very few years since, esteemed temporary in their character, and were never planted in a permanent orchard. While this opinion may be to a certain extent true, or rather, while we have no evidence to controvert its truth, and while the pear on its own root, must always have the preference in a permanent orchard, yet those on quince may always advantageously have a place in every orchard, and may be profitably cultivated for market fruit. That this opinion is becoming more prevalent, is evinced by the large sales of pears on quince that are made annually, in various parts of the country. To ensure success, they require very different treatment from those on their own root, and as a few years experience may be of value to some who are about planting, I will briefly relate the course that I have pursued with satisfactory results.

Some few years ago, becoming convinced that the profits of the nursery business could not be relied upon, I decided, with our friend Rivers, to cast out another anchor to windward. I prepared at first only four acres, intending with these to test the experiment, and then, if successful, to plant my whole farm.

Although much fruit has not yet made its appearance, the fruit buds promise me so abundant a crop another year, as almost to warrant me in planting to a very large extent.

The field I selected was an old pasture ground, with light loamy soil, but not inclining to sand, and a subsoil of hard-pan. This I planted with corn until the ground was well mellowed, and then put upon it two sloop loads, or 3,000 bushels of stable manure, worth on the ground, $175.

The orchard was then planted with pears on their own root, twenty feet apart. Between these were planted pears on quince, ten feet apart, each row being thus ten feet apart, and the trees in each ten feet. Each alternate row is thus all pears on quince, or

half on pear and half on quince, and the whole orchard contains 1,760 pears, 1,320 being on quince, and 440 on their own root. By thus planting, I think I gain a double advantage. Those on quince come in bearing soon, and will produce a good crop while the others are growing, and those on pear will undoubtedly be sufficiently large to produce a good crop, and even to occupy the ground to the exclusion of the others, long before those on quince will decay, if such decay ever should take place.

Pears on quince require high garden culture, and it is my practice to put upon this orchard two sloop loads of manure every year. The first year after planting, the orchard was cropped with corn, which I found to be injurious to the trees. I have since cropped with potatoes and sugar beets, alternately, and with good management, the crop of these can be made to pay for the manure, and sometimes for the labor. With the exception of a single row, all those on their own root are of one variety, the *Lawrence*. This variety originated on Long Island, is hardy, an early and abundant bearer, and a good grower. The fruit of medium size, nearly equal to the Virgalieu (Doyenne) in flavor, is in eating from mid-autumn to mid-winter, and will keep and ripen in a barrel, like apples. Its uniform price in the market in autumn, is five dollars per bushel, and at its latest period of maturity, when no other pears can be found in market, it would probably bring ten to fifteen dollars per bushel.

Of the varieties on quince, I have only planted six. *Glout Morceau, Vicar of Winkfield, Louise Bonne de Jersey, Winter Nelis, Lawrence and Beurre d'Aremberg.* With the two latter the orchard is not quite finished, owing to the difficulty in obtaining them. It is always quite as uncertain to form an estimate of a crop of fruit, as it is for our Boston friends to calculate the amount of money they can make from the 250 chickens hatched from the 260 eggs, laid according to guarantee, in 276 successive days, by the pure white Shanghæ hen, which may have cost fifty dollars. But after making all reasonable allowances, and finding to-day, upon some of my Vicar of Winkfield trees, planted in the spring of 1849, from fifty to seventy-five fruit buds each, I shall be somewhat disappointed if those on quince, in the fifth year from planting, should not produce one dollar per tree. The same result I hope to obtain from those planted on their own root, in the tenth year, after making all reasonable deductions from loss by blight. It will not be safe to estimate that the crop between the trees will always pay the expense of cultivation. With good management, it may do so the first few years; but as the trees grow, the roots will gradually occupy the space between them, when no crop can be grown, although high manuring will still be required.

There may be, and we know in the experience of some there have been, obstacles in the cultivation of this fruit, which have not yet obstructed the advancement of my trees, and it may not be safe for all to estimate according to the preceding statements. Such, however, are the results of my experience; and while it may be expedient to make large allowances for difficulties which may hereafter present themselves, I cannot doubt, that with the present almost entire destitution of good pears, in all the markets, and the facilities of transporting them to England, I should be fully justified in planting much more largely than I have yet done.

S. B. Parsons.

Flushing, Dec. 10, 1850.

SOME FACTS ABOUT ORCHARDS IN NEW-ENGLAND.

BY HENRY F. FRENCH, EXETER, N. H

Mr. Downing—How strange it is, that after all the preaching you and I, and other sensible men, have done, no more attention is paid in New-England to raising fruit, as a regular source of profit! An instance of Yankee shrewdness has recently come to my knowledge, which well illustrates the advantages of knowing something on this subject. In the spring of 1846, a Mr. W. was engaged in grafting apple trees, in various parts of Rockingham county, and with the rest, grafted enough to amount to about twelve dollars, for Mr. R., of Brentwood, upon an old orchard of natural fruit, consisting of about one hundred trees. Mr. R. thought it rather extravagant to expend so much in an experiment so hopeless, and W. finally proposed that he would go on in subsequent years, and graft as many of the old trees as he chose, do the necessary pruning, and receive for his pay one half the fruit that should grow on his grafts during the next twelve years, and R. should cultivate the land among them, for his own profit. This was considered a very liberal proposition, and at once accepted, and the contract was reduced to writing, and executed. I happened to be at Brentwood during the past autumn, just after W. had called for his share of the fruit, and learned that the scions set in 1846, for setting which, he had charged twelve dollars, produced *sixteen barrels* of marketable Baldwin Apples, worth twenty-four dollars. Mr. R. had become so far convinced of his mistake, that he offered W. *one hundred dollars* to release his interest in the orchard, which W. promptly declined. I soon afterwards met W., and conversed with him on the subject, and he said that so far from releasing his interest in the contract, for that sum, he would not sell his share of the fruit *for one year*, for that amount, and allow the purchaser to choose it out of the term.

He has now grafted most of the trees with the Baldwin Apple, and thinks he shall get more than a hundred dollars a year, in each of the *even* years of the last half of his term. The *even* year is, as you well know, the bearing year for the Baldwin, throughout New-England. Mr. W. further informs me, that he has made many similar contracts in the neighborhood, and has acquired an interest in about one thousand trees; that his share of apples, grown on land of other people, the past fall, was ninety barrels, and that none of the scions which produced it were set prior to 1845. He grafted one tree in 1845, which produced in 1850, six barrels of fruit, and that he knows fifty trees which this year produced ten barrels each, worth in all, $750.

Now, there are scattered all over New-England, orchards, of natural fruit, which is either fed to swine, or made into cider. As food for swine, *sour* apples are a little better than nothing. I have given hundreds of bushels to my swine, which seemed to find at least a rational amusement in eating them. Indeed, for *store* pigs, they do tolerably well, but for *fattening* animals, I should adopt the principle laid down in the good woman's receipt for making sawdust bread, "the less sawdust, the better the bread." Sweet apples are worth, perhaps, one-sixth as much per bushel, as food for animals, as Indian corn, and this will just about pay for gathering them.

As to cider, we estimate that eight bushels of apples, will make one barrel of cider, worth one dollar and fifty cents, which will not pay a man who has any thing else to do, for his labor in making it, if you give him the fruit on the trees. The natural fruit, then, is of no value, and the facts before stated, show how readily the useless trees which produce it, may be made valuable.

But it may be said, that great attention has already been given to this subject, and that vast quantities of apples are already produced in New-England. Let us see how this matter is. By the census tables of 1840, it appears that the "products of orchards in New-Hampshire, was greater, in proportion to its population, than that of any other New-England state, except Connecticut, and nearly equal to the product of that state; and that Chester, in Rockingham county, gave a larger product than any other *town*, (by which your southern readers must understand *township*,) in the state, with one exception. Now, I happen to know all about that good old town, for there I was born and bred, and taught to plant trees, and love them too; and although, with a population of only 1,300, it stands almost first as a fruit grower, it will be seen that its product is trifling, compared with what it might and should be. A citizen of that place, whose business calls him into all parts of the town, and who personally gave me the results of his inquiries, has carefully taken an account of the marketable winter apples produced there, in the present year, 1850, noting the name of the producer, and the kind and quantity of fruit raised by each. He has taken an account of a little more than *ten thousand* bushels, equal to four thousand barrels, of which nine-tenths are of the Baldwin Apple. The Baldwin bore bountifully this year, throughout this state, while other varieties bore but little. I think the whole crop this year is not much, if any, over the average of other years. One further fact will enable me fairly to present my view, and that is, that one single orchard, in the town referred to, covering only two acres of land, produces annually, on an average, eight hundred bushels of first rate winter apples, equal to about one-twelfth of the whole product of one of our best fruit growing towns; so that it seems that twenty-five acres of well cultivated trees, might produce as much as that whole township, of some 25,000 acres, now produces, and yet their crops of this year would give to each man, woman, and child of the town, about twenty bushels of winter apples.

A comparison of the facts I have stated, will give some idea of the adaptation of our soil to the culture of the apple, and I think, clearly show that we have as yet, made but a beginning in this branch of cultivation. I suppose that any land in New-Hampshire, except an occasional dry, sandy, pine-plain, which will yield thirty bushels of Indian corn to the acre, may, with the same annual labor and manuring, produce *three hundred* bushels of winter apples, of the best quality, worth almost as much per bushel as the corn. Most of us are ready to admit, that corn at the north, cannot be raised with profit. We are losing all confidence in the potato crop, and our manufacturers are sagely shaking their heads, and saying that New-Englanders must leave agriculture to the west and south, and "devote their behavior" to cotton-mills and the mechanic arts. Now I believe, sir, that the cultivation of the apple alone, may be made a source of more profit to New-England, in twenty-five years, than all her present manufactures; and I trust the day is far distant, when the sturdy sons of the Puritans will leave their fair fields, on the mountain sides, and in the river valleys, and grow pale and degenerate in the pent-up factories and workshops.

No portion of the world is better, and I think none so well, adapted to this fruit, as New-England. Our Baldwin Apple is in perfection about the middle of January, and our Russets are in eating until June. Indeed, we often see the old year's fruit of our orchards, side by side with that of the new year. So, after the apples of more southern orchards have decayed, we have the market to ourselves. Steam navigation renders exportation to the whole world, easy for us, and the home consumption, as well as foreign, must increase beyond the supply, for a generation to come, at least.

But I did not propose to write an essay, only to say enough to attract more attention

to the old trees, which are impatiently waiting to be grafted, and to prompt to the planting of new orchards.

Like the "Ancient Mariner," I am very apt, when I get upon my favorite subject, to hold on to my auditor till he is tired of me. I have read the Horticulturist from its commencement, and think the "Granite State" has not contributed its fair proportion to your columns. If no better hand should offer, perhaps, in future numbers, I may be able sometimes to remind your readers, that we are not so far north, but that our trees blossom, and give fruit and shade in summer, and our ink may be thawed by a good fire in winter. I have concluded that one need not refrain from writing for a publication because he may not know quite so much as the editor. Many seem, as a matter of course, to disbelieve in all *new* theories in agriculture, as if ADAM, and his graceless son, Cain, had exhausted the whole subject, and transmitted their knowledge, with other fruits of the forbidden tree, to all their posterity alike. Upon *them*, an impression may be made, by repeating good advice until its novelty is wore off, and it comes to have some respeect because of its antiquity.

Others seem to listen and comprehend, but never to profit by good teachings. The good seed of the sower, seems to fall upon a kind of ground not named in the parable, a swampy soil, perhaps, where it neither vegetates nor perishes. Now this class is not entirely hopeless. The general tone of their ideas is gradually elevated. They are like the good woman who went to church every Sunday, without being able to recollect a word of the sermon. She said, that in bleaching her cloth on the grass, she sprinkled it day after day, with water, and it grew whiter and whiter, but not a drop of water remained upon it! and she supposed the preaching affected her in the same way!

An amusing instance of inattention of this sort, came to my notice last last spring.

A neighbor of mine gravely announced to me one bright morning, that he believed that some sort of a *bug* was biting his plums, and described the crescent shaped bite of the *curculio!* Upon my explanation of the matter, he said he had often heard and read of such creatures, but seemed utterly amazed that an insect with such a *scientific* name, should come into the enclosure of a plain, honest farmer, like himself. He evidently had an idea that the curculio was of the *humbug* species, and belonged exclusively to *book farmers*. He pursued the subject very earnestly, however, and a few days after announced that he had suceeeded in capturing one of the enemy, and produced him to his admiring family and friends, in the shape of a *dor-bug!* The best advice to such people is, to subscribe for the Horticulturist. Yours truly, HENRY F. FRENCH.

[Our correspondent is right in saying that New-Hampshire has not hitherto been duly represented in our columns. As we recognize in him, a correspondent of the right stamp, we bid him welcome, and shall hope to have more of such pithy matter from the Granite State, frequently. ED.]

THE FRUIT-GROWERS' CRUSADE AGAINST THE GRAND TURK.

BY WM. HOPKINS, BRUNSWICK, N. Y.

OF what use is the curculio? This question has often forced itself on my mind, when witnessing the vexatious effects of its industry and perseverance; but I have never answered it to my own satisfaction.

I have been acquainted with this destroyer about ten years, and if the observations I have made, should, by you, be considered worth recording in the Horticulturist, you are heartily welcome to them.

During the term above stated, the curculio has multiplied with fearful rapidity, in this vicinity. A few years since, when trees of bearing size, were not so numerous by many hundreds, as at present, plums and cherries were seen in abundance, in our markets; latterly, they may be seen in abundance, when one-third grown, under the trees.

The curculio flies faster and farther, than most writers suppose it does. I have worried a specimen with lime, salt, &c., and with a splinter of wood, until the outside shell has opened up the center of the back, and a pair of wings projected seemingly from behind, very like the wings of the insect known by the common name "lady-bird," or lady-bug. In the spring of 1846, I planted an orchard and garden, with nearly one thousand fruit trees and shrubs, in a situation where there are no other fruit trees nearer than an eighth of a mile; yet, the unmistakable crescent-shaped punctures, were visible the same season on every stone fruit that set—on the pear, and to my astonishment, on the grape, and the gooseberry. I have also seen it on large sized currrants. It does no injury, however, to the last named fruits.

The curculio does but little damage when plenty of poultry is kept in the fruit garden. Strolling one day, on the grounds of a slovenly neighbor, I was delighted with the sight of twenty or thirty trees of the common horse plum, loaded with perfect fruit. The trees standing in sod—unsightly objects—pigs and chickens the only gardeners. I have noticed in several gardens, where poultry is kept, the result to be satisfactory.

The curculio is most active about night, and may be seen, as busy as bees, in the early evening—even in places where it is difficult to find a specimen in the daylight.

I have never battled the curculio with success. They are too numerous for me; they can reinforce faster than I can kill. I wish it were possible to annihilate them.

I have just put heaps of manure under the trees, but it does not hinder them. I have hung vials of sweetened water in the trees, and caught thousands of flies and moths, of various kinds, but the "turk" will not enter. I have tried tubs, and a light, at night—the invitation was slighted. I have thrown slaked lime over the trees, and on the fruit; the curculio has poked it away with perfect ease. Being determined, last season, to secure a few apricots, I white-washed them, and, (can you believe it,) the wretches stood on the stalks, and effected their work of destruction. I have tried, early in the season, to cut out the eggs—if I cut out one in the morning, there would be two or three in an excellent condition to be operated upon in the evening, on the same fruit. From thirty nectarine trees, I had but three nectarines, last season; those were on a small tree under which a few fowls were regularly fed.

I have some faith in paving, although I have not tried it. In a back yard in Sixth-street, Troy, there are four stunted, little, knotty plum trees, bearing an inferior white plum. The lady of the house told me those trees produced more than three bushels of plums, free from the marks of any insect.

The yard is closely paved all over with bricks. In other parts of the city, where branches over-hang the public pavements, the fruit hung on till the boys knocked it off. I do not believe a bushel of perfect plums were produced in either of the excellent gardens on Mount Ida, in 1850. In this I may be mistaken, as I judge entirely from the appearance of the trees in July; there are no pavements in those gardens. From more than fifty plum trees in my own garden, but one plum ripened. From a hundred cherry trees, but three or four cherries. There was no neglect on my part. The trees were jarred, and the curculios picked up and destroyed, as long as a perfect fruit was visible. Again, the question forces itself—What is the curculio for? I cannot tell, unless to feed the birds.

The birds are not here now;—thoughtless boys, and barbarous men, have hunted them, until only an occasional timid wanderer, can be seen.

I have put the following questions, to the oldest people in the neighborhood, and received, invariably, about the same answers. "Are your apples as sound now, as those you raised thirty or forty years ago?" "Oh no! they're gnarly and wormy now—*the seasons aint as good as they used to be.*" "Are the birds as plentiful now, as formerly?" "Oh law, no! they used to make noise enough to deafen you, when I was young." "Do you raise as much poultry?" "Why no! guess not, we get more butchers' meat now." It will be readily observed by the first reply, that those persons have not the least idea of the present cause of failure—(I do not insist that the curuclio is the only troublesome thing.) I know of a solitary apple tree, in a forty acre field, where every fallen fruit shows several crescent shaped punctures.

I have never yet conversed with a person who understood the natural history of the curculio. The only one that seemed to have any previous idea of it, was an Irishman. He complained to me, that his plums were all falling to the ground. As I make it a rule to talk to every one who will listen to me, about the curculio—I commenced an explanation—he suddenly threw up both hands, and exclaimed stentoriously, "is it the *baby's nail*, you mane? by this, and by that, I always minded the thing as a token of bad luck, and so I did." By the way, his is a *stiff clay* soil, and *that* dont save him.

Paving under the trees, or white-washing the fruit, may save the crop, but both plans are expensive; and even when we have done it—the greatest vigilance is necessary, because we are still surrounded by the enemy. Nothing short of total extermination, should be the aim of the fruit grower;—let him explain the nature of this insect, to every one who owns a tree, to every man, woman and child, on his premises;—let him be a grower of poultry, as well as a grower of fruit;—let him give accommodation and encouragement to the birds of the air, in every possible way;—let him petition the proper authorities, that stringent laws may be enacted for their preservation; that all dishonest persons may be prevented from coming on our land, to shoot, or ensnare them. The word dishonest may appear too severe for this place—let it pass. Those who feed the birds, (namely, the owners of the soil,) have a special claim to their services, and no straggling sportsman should deprive them of it.

People around me, pay but little heed to my advice, in regard to the curculio, because I have never been able to save a crop of fruit. This war of extermination must be general; a few individuals, scattered over the face of the country, cannot effect it. I think if the N. Y. State Agricultural Society should have a simple history of the nature and habits of the curculio, with the best means of destroying it, printed and posted up, in every country tavern, and district school-house, in the state, the good arising therefrom, would be seen in a very few years. Yours, &c. WILLIAM HOPKINS.

Pomona, Brunswick, Rens. Co., N. Y., Dec. 13, 1850.

[We are glad to find that our correspondent, despairing as he seems to be, has still faith in fowls. We, also, believe that plums and the poultry-yard, should go together. There are some districts like his, where the curculio seems almost to "rain down,"—while others, like Hudson, Albany, and Schenectady, produce the finest plums, as easily as currants. We have seen hundreds of bushels of delicious plums—green-gages, etc., in the famous orchard of Mr. DENNISTON, near Albany—the soil a stiff clay. Yet the country at large, suffers sadly from the Grand Turk, and we want more light. ED.]

MR. DOWNING'S LETTERS FROM ENGLAND.

Four days in the Isle of Wight—the weather, the climate, and the scenery, all delightful. The Island itself, about fifteen miles long, is England in miniature—with its hedges, green lawns, soft-tufted verdure—now and then a great house, and plenty of *ornee* cottages. In some respects it fell below, but in many, fully equalled my expectations. If you think of it as the "Garden of England," it will disappoint you, for there are counties in England—for example, Warwickshire—better cultivated, and more *soignee*, than this spot. A considerable portion of the Island—especially the western end, is neither cultivated fields nor gardens, but broad downs and high bluffs. I should say that you would get the best idea of the Isle of Wight, without seeing it, by imagining it composed partly of Nahant, and partly of Brookline—near Boston—the prettiest rural nest of cottage villas in America. The bare grass slopes and bluffs of Nahant, will correspond to the western part of the Isle of Wight, while the suburbs of Boston, that I have mentioned, are a very fair offset to the more decorated and cultivated cottages and grounds of the eastern and southern portions.

You cross from Southampton to the Island, in rather less than an hour, by one of the small mail steamers plying here. The towns of East and West Cowes, where you land, as well as Ryde, which is a few miles further, have quite a gay appearance at this season of the year, from the harbors being filled with the pretty vessels of the various yacht clubs, that hold their regattas here—and the accommodation at the hotels is, for the time at least, brought up to the style and prices which the titled yacht-men naturally beget. The flag of the admiral of this fancy fleet, the Earl of Yarborough, floated from the mast of his fast looking vessel, and a variety of craft, of all sizes, lying about her, gave the whole neighborhood an air of great life and animation.

Our party, three in number, took one of the light, open carriages, with which the Island abounds, and started, the next morning after our arrival, to explore it pretty thoroughly.

The neighborhood of East Cowes, abounds with pretty seats, and, on the opposite shore, are numberless little cottages, by the side of the water, "to let," with all the cosy furniture in-doors, of English domestic life, and out-of-door accompaniments of trees and shrubs, and overhanging vines, that gave them a very inviting appearance. Although I had never lived under the authority of a landlord, I could find nothing but temptations to become a lessee of such pretty domicils as these. They look so truly home-ish, and tell you at a glance, such a story of years of the tenderest care and attention, in all that makes a cottage charming, that they make one long to stop acting the traveler, and nestle down in the bosom of that peaceful domestic life, which they suggest.

A short distance, perhaps a mile, from Cowes, is Osborne House—the marine residence of Victoria. This place is her private property, and having been almost wholly erected within a few years past, may be said to afford a tolerable index to the taste of her Majesty. The residence is an extensive villa, in the modern Italian style, with a front of perhaps two hundred feet, and the outlines picturesquely broken by tower or campanile. It stands in the midst of a sandy plain, which is level around the house and toward the road, and undulating and broken towards the sea—of which it commands fine views.

It is fenced off from the highway by a close, rough board "park paling," some seven or eight feet high. Within this fence is a belt of young trees, and scattered here and there, over the surface of most of the enclosure, are groups and patches of small trees and

shrubs, newly planted. The whole place has, most completely, the look of the pretentious place of some of our wealthy men at home, who, turning their backs upon the numberless fine natural sites, with which our country abounds, choose the barest and baldest situation, in order that they may dig, delve, level and grade, and spend half their fortunes, in doing what nature has, not a mile distant, offered to them ready made, and a thousand times more beautifully done. Osborne House may be a tolerable residence, (we mean respecting its out of-doors-pleasure,) fifty years hence; but it is almost the only country seat that we saw in England, that looked thoroughly raw and uncomfortable. I suppose, in a country where everything seems finished, there is a singular pleasure in taking a place in the rough, and working beauties out of tameness and insipidity. The QUEEN lives here, and walks and drives about the neighborhood, in a comparatively simple and unostentatious manner, and attracts very little attention, and her husband practices farming and planting, quite in good earnest.

A country seat, only a mile distant, in a thoroughly English taste, was a complete contrast to the foregoing, and gave us great pleasure. This is Norris Castle, built by LORD SEYMOUR, but now the property of Mr. BELL, who resides here. Neither the place, nor the house, is larger than several on the Hudson, and the grounds reminded me, in the simple lawn or park, sprinkled with fine groups of trees, of Livingston Manor and Ellerslie. The house gave me greater pleasure, than any modern castellated building that I have seen; partly because it was simple, and essentially domestic-looking, and yet, with a fine relish of antiquity about it. The facade may, perhaps, be 130 feet, and I was never more surprised, than when I learned that the whole was erected quite lately. The walls are of gray stone, rather rough, and they get a large part of their beauty from the luxuriant vines that festoon every part of the castle. The vines are the Ivy, and our Virginia creeper, intermingled, and as both cling to the stone, they form the most picturesque drapery, which has, in a few years, reached to the top of the battlemented tower, and given a mellow and venerable character, to the whole edifice.

We dined at Newport, the substantial little town, which, lying nearly in the center of the Island, serves as its capital and principal market. The Isle of Wight, enjoying, as it does, a wholly insulated position, is almost the only English ground not interlaced by rail-roads. For this reason, the genuine stage coach, now comparatively obsolete elsewhere, still flourishes here, and still carries a number of passengers out-side, quite at variance with all our ideas of safety and speed. The guard, who accompanies these coaches, usually performs an *obligato* on the French horn or key bugle, just before the coach starts—and performs it too, with so much spirit and taste, that it was not without some difficulty I could resist the temptation to join his party. Progress, and the spirit of the times, though they give us most substantial benefits, in the shape of rail-roads, etc., certainly do not add to the poetry of life—as I thought when I compared the delicious air of BELLINI, played by the coach guard, with the horrible screams of the steam-whistle of the locomotive—now associated with the travel of all christendom.

It is but a mile from Newport to Carisbrook Castle—one of the most interesting old ruins in England. It crowns a fine hill, and from the top of its ruined towers, you look over a lovely landscape of hill and vale, picturesque villages, and green meadows. The castle, itself, with its fortifications, covers perhaps, half a dozen acres, and is just in that state of ruin and decay, best calculated to excite the imagination, and send one upon a voyage into dream-land. You clamber over the parapets, and look out from amid the mouldering battlements, mantled with the richest masses of Ivy, and see wild trees growing in the very center of what were once stately apartments. Here is the very window from which

CHARLES I. vainly endeavored to make his escape, when he was a prisoner within these walls, two hundred years ago, (1647.) I felt tempted to question the stone walls around me, of the sad soliloquies which they had heard uttered by that royal prisoner and his children, confined here after him. But the stone looked silent and cold; the Ivy, however, so full of mingled life and health and antiquity, seemed full of the mysterious secrets of the place, and would, doubtless, have unburdened itself to a willing ear, if any such would linger here long enough to get into its confidence. I looked down into the vast well, in the center of the castle, 300 feet deep, and still in excellent order—from which water is drawn by an ass, walking his slow rounds inside a large windlass wheel. I clambered up the 72 stone steps that led into the high old ruined *keep*, and found one of my companions, (who is a military man,) discoursing to a little group of tourists, who had made a pic-nic on the ramparts, about the nature of the fortifications—breast works—and bastions, which cover some fifteen or twenty acres under the castle walls. While he was demonstrating how easily this ancient stronghold could be taken by a modern beseiger, I speculated on the quiet way in which a few types and a printing press, are, at the present moment, far more powerful restrainers of wayward sovereigns, and more able protectors of the rights of the people, than the fierce battlements, and standing war dogs, of the old castles of two centuries ago. The imagination is so excited by these strong old castles, now fast crumbling into dust, that we wonder what the people of two hundred years hence, will have, to be romantic and picturesque about, as emblems of power in a by-gone age. An old printing press, or galvanic battery, perhaps! No—even they will be melted up for their value, as old metal.

We drove from Carisbrook, to the extreme end of the Island—saw the Needles, the colored sands, and the white cliffs of Albion, and returned by the south side. What pleased me more than even the sea views, and the bold bays, and snowy cliffs, (perhaps from novelty,) were the *Downs*—those long reaches of gently sloping surface, covered with very short grass—as close and fine as the finest lawn. They are so smooth and hard, and the air is so pure and exhilirating, the temperature so bracing and delightful, that one is tempted into walking—or even running—miles and miles, upon them. Here and there, mingled with the grass, on the breeziest parts of the Downs, I saw tufts of heather, in full bloom, only two or three inches high—their purple bells embroidering, as with the most delicate pattern, the fragrant turf. Herds of sheep graze upon these Downs, and the flavor of the mutton, as you may suppose, is not despised by those who cannot live upon air, however elastic and exhilirating.

All over the Island, the roads, sometimes broad—but often mere narrow lanes—are bordered by high hawthorn hedges—so that frequently you drive for a mile or more, without getting a peep beyond these leafy walls of verdure. I could imagine that in May, when these hedges are all white with blossoms, the whole Island must be a very gay landscape—but just now, they only served to confirm me in my opinion of the Englishman's fondness for seclusion and privacy, in his own demesne. Just in proportion to the smallness of his place, his desire to shut out all the rest of the world, increases—so that if he only owns half an acre, his hedge shall be eight feet high, and the sanctity of the paradise within, remains inviolate. The solid, high, well built stone wall around some of the little cottage and villa places of half an acre, on the south side of the Island, astonished me, and gave me a new understanding of the saying, that "every man's house is his castle." Here, at least, I thought, it is clear that people understand what is meant by private rights, and intend to have them respected.

It was not until I reached the pretty villages of Bowchurch, Shanklin, and Ventnor,

that my ideal of the Isle of Wight was realized. These villages lie on the south side of the Island, backed by steep hills, and sloping to the sea. The climate is almost perfection. It is neither hot in summer, nor cold in winter, and though open to all the sea breezes, the latter seem shorn of all their violence here. The consequence is, they enjoy that perfect marriage of the land and sea so rarely witnessed in northern climates. The finest groves and woods, the richest shrubbery and flower-gardens, the most emerald-like glades of turf, here run down almost to the beach, and you have all the luxuriant beauty of vegetation, in its loveliest forms, joined to all the sublimity, life and excitement of the ocean views. As to the climate, you may judge of its mildness and uniformity, when I tell you that the Bay trees of the Mediterranean grow here on the lawns, as luxuriantly as snow-balls do at home, and Fuchsias, as tall as your head, make rich masses in almost every garden, and stand the winter as well here, as lilacs or syringoes do with us. In the neighborhood of Shanklin, I saw a charming old parsonage house—the very picture of spacious ease and comfort—with its great bay windows, its picturesque gables, and its thatched roof—quite embowered in tall *myrtles*—Roman myrtles—one of our cherished green-house plants, that here have grown thirty or forty feet high, quite above the eves! Bays, Portugal laurels, hollies and China roses, surround this parsonage, and never lose their freshness and verdure, (the owner assured me the roses bloomed all winter long,) cheating the inhabitants into the belief that winter is an allegory, or if not, has only a substantial existence in Iceland or Spitzbergen.

Then the hotels here—especially in Shanklin—are absolutely romantic in their rural beauty. Designed like the prettiest cottages, or rather in a quaint and rambling style, half cottage and half villa, the roof covered with thatch, and the walls with Ivy, jessamines, and perpetual roses, and set down in the midst of a charming lawn, and surrounded by shrubbery, you feel the same reluctance to take the room which the chambermaid, with the freshest of roses in her cheeks, and the cleanest of caps upon her head—shows you, as you would in hiring the apartments of some tasteful friend in reduced circumstances. When you rise from your dinner, (admirably served,) always in a private parlor, the casement windows open upon, a velvety lawn, bright with masses of scarlet geraniums, verbenas, and Tea roses, set in the turf, and you give yourself up to the profound conviction that for snugness, and cosiness, and perfection at a rural Inn, the world can contain nothing better than may be found in the Isle of Wight.

Bowchurch disputes the palm with Shanklin, for picturesque and sylvan beauty. We made a visit here to Capt. S—— of the Royal Navy, whose beautiful villa in the Elizabethean style, gave me an opportunity for indulging my architectural and antiquarian taste to the utmost. Imagine an entrance through a rocky dell, the steep sides of which are clothed with the richest climbing plants, between which your carriage winds for some distance, passing under a light airy bridge, with festoons of Ivy and clusters of blooming creepers waving over your head. You soon emerge upon the prettiest of little lawns, studded with fine oaks, and running down to the very shore of the sea. On the left are shrubberies, pleasure grounds, kitchen and flower gardens, all in their place, and though you think the place one of 60 or 80 acres, there are not above 20.

The house itself is one of the most picturesque and agreeable residences of moderate size that I have ever seen. Its interior, especially, unites architectural beauty, antique character and modern comfort, to a surprising degree. Every room seemed to have been studied, so that not a feature was omitted, or an effect lost, that could add to the pleasure or increase the beauty of a home of this kind.

If I was delighted with the house, I was astonished with the furniture. It was all in

the antique Elizabethean style—richly carved in dark oak or ebony. This is not very rare in England, and I had seen a good deal of the same style in many of the great country mansions before. But almost every piece here, was either a master-piece of workmanship, or marked by singular beauty of design, or of great historical interest. Yet the effect of the whole, and the adaptation to the uses of each separate room, had been considered, so that the *ensemble* gave the impression of the finest unity of taste. Among the fine specimens which LADY S—— had the goodness especially to make us acquainted with, I remember an exquisitely carved work-box once presented by ESSEX to ELIZABETH, a curious silver clock that belonged to CHARLES I. (and was carried about with him in his carriage on his journeys;) and a superbly carved, high bedstead, once Sir WALTER RALEIGH'S, and the the couch of CARDINAL WOOLSEY. There was also an old Dutch organ, bearing the date 1592, of singularly beautiful workmanship, and still in perfect tone. Some rare and unique carved oak cabinets, of Flemish origin, one of them with the history of JOHN THE BAPTIST carved in the different pannels, challenged the most elaborate investigation. Of beautiful chairs, seats, and carved wainscot, there was the greatest variety, and in short the house was at once a museum for an antiquarian—and the most agreeable home to live in.

This villa was built by a wealthy eccentric—I think a bachelor—who wholly finished the collection only a few years ago. He carried his passion for collecting very choice and rare antique furniture—especially that of undoubted historical interest—to such an extent, that it became a species of madness, and at last led him through a very large fortune, and forced him to surrender the whole to his creditors. You may judge something of the cost of the furniture—every room in the house being well filled—when I tell you that for a single Flemish cabinet, only remarkable for its superb carving, not for any history attached to it, he paid £900, (about $4,500.) The property, when brought into market in the gross, was of course bought by the present owner at a merely nominal sum, compared with its original cost.

England, though in the main remarkable for its common sense, abounds with instances like this, of large wealth applied to the indulgence of personal taste—to the building of a great mansion, the collection of books, pictures, or to the indulgence of personal whims or fancies. Thus the EARL OF HARRINGTON has in his seat near Derby, a peculiar spot of twenty or thirty acres, wholly filled with the rarest and most beautiful *evergreens* in the world—where Araucarias and Deodars, bought when they were worth five or ten guineas a piece, are as plentiful now as hemlocks in western New-York; where dark-green Irish Yews stand along the walks like sable sentinels, and gold and silver hollies and yews are cut into peacocks, shepherds and shepherdesses, and all manner of strange and fantastical whimsies. The conceit, though odd, (I had a glimpse of it,) is the finest specimen of its kind in the world—yet the owner—an old man now—who has amused himself and spent vast sums on this garden for twenty years past, will not let a soul enter it—unless it may be some gardener whom it is impossible to imagine a critic. Even the DUKE OF DEVONSHIRE—so the story goes—in order to get a sight of it, went *incog* as a kitchen gardener. The DUKE OF MARLBOROUGH, a few years ago, had a private garden at Blenheim, surrounded by a high wall, into which even his own brother had not been admitted. You see even the most amiable qualities of the heart—those which lead us to make our homes happy, occasionally run into a monomania.

I left the Isle of Wight with the feeling that if I should ever need the nursing of soft airs and kindly influences in a foreign land, I should try to find my way back to it again. Even one, blest with excellent health, and usually insensible to the magical influence which

most persons find in a change of air, finds something added to the pleasurable sensation of breathing and taking exercise, in the delicious summer freshness of this spot.

There is another memorandum which I made here and which is worth relating. In England at large, the great wealth of the landed aristocracy, and the enormous size of their establishments, raises the houses and gardens to a scale so far above ours, that they are not directly or practically instructive to Americans. In the Isle of Wight, on the other hand, are numerous pretty cottages, villas and country houses, almost precisely on a transatlantic scale as to the first cost and the style of living. For this reason, one who can only learn by seeing the thing done to a scale that he can easily measure, should come to the Isle of Wight to study how to get the most for his money—rather than to Chatsworth or Eaton Hall. And it is this kind of rural beauty, the tasteful embellishment of small places, for which the United States will, I am confident, become celebrated in fifty years more. Yours sincerely, A. J. D.

Brighton, August, 1850.

Literary Notices.

A Practical Treatise on the Construction, Heating and Ventilation of Hot-Houses, including Conservatories, Green-Houses, Graperies, and other kinds of Horticultural Structures. By Robert B. Leuchars. Boston, Jewett & Co., 8vo. p. 366.

We have looked through the pages of this volume, which is fresh from the press, and welcome it as a valuable contribution to our horticultural literature.

It is the production of a practical gardener whose communications are familiar to our readers, and he enters into the various branches of his subject with that minute knowledge of the wants and requirements of exotic plants, that can only be possessed by one who is thoroughly conversant with their culture.

Besides this, the work is a better manual on the construction of the various species of glass structures, than any that we remember in the English language. The author presents a well digested account of all the various forms and designs most generally approved abroad, and gives very excellent advice, based on his experience here, for the erection of horticultural buildings in the United States. The best methods of warming and ventilating hot-houses, and the management of the atmosphere when the buildings are filled with plants, are treated with much scientific and practical ability. The work is illustrated with numerous cuts and diagrams explanatory of the text, and is sold at the low price of $1. It will be found a very useful text-book for those who are about erecting glass structures of any kind, from the small forcing-pit, up to the most costly domed conservatory, and we shall be glad to see it pass through several editions.

Elements of Scientific Agriculture, or the Connection between Science and the Art of Practical Farming. By John P. Norton. Albany, Pease & Co., 12mo., 208 pages.

This little volume has been published several months, and has already found favor in the eyes of a large circle of readers. It is an attempt on the part of Professor Norton, of Yale College, to put in the shape of an elementary volume, which the farmer may carry in his pocket, or the student use as a class book, the scientific knowledge of the present day in the cultivation of the soil.

The intention is well carried out in its execution. The language is clear and plain, and the unnecessary use of technical terms has been avoided. The novice in the science of farming, or the practical farmer who has just discovered that science has already done

something and is on the eve of doing much more for his art, will both find in this an admirable stepping stone to the subject—by the aid of which, if he has any real interest and intelligence about the matter, he may climb to regions of endless interest, and if he is clever enough to sift that which has *practicability* in it, from the purely theoretic—endless profit.

This volume had its origin in a prize essay elicited by the New-York State Agricultural Society—and has been warmly approved of by that body. We gladly recommend it to beginners in the science of farming.

The Western Horticultural Review, No. 2. Edited by Dr. WARDER. Cincinnati, Ohio. 8vo., $3 per ann.

THERE is a pleasant physiognomy about our young kinsman of the Buck-eye state, and we very cordially shake hands with the Editor across the Alleghanies. This number has as a frontispiece—the "wine house of CORNEAU & SON," and there is a flavor of the vineyard and vintage aboui it, that marks its locality in the midst of the new wine regions of America.

A large part of this number is occupied with a report of the Annual Fair of the Cincinnati Horticultural Society, which seems to have been a very brilliant and successful anniversary. A complimentary piece of plate, in the shape of a finely wrought silver goblet, was presented to N. LONGWORTH, Esq., for his eminent services in horticulture, and a spirited address was delivered by Mr. MANSFIELD.

The vintage on the Ohio has been large this season, but the quality of the wine is thought a little below the average. The Editor gives the same account of the comparison of the Diana grape with the Catawba, which Mr. LONGWORTH has already laid before our readers—and very properly adds that the grapes sent from Boston were not in fit condition for the test. He also says, "at Mr. HOVEY'S nurseries, (near Boston) I saw last November, the Catawba and Diana, side by side—the one green, shrivelled, and not fit to eat—the other plump, juicy, and of pleasant flavor"—not bad evidence *en passant* of the better qualities of the Diana in a northern climate. The west is certainly large enough to present its local interests more completely through such a medium as this new serial, and we wish Dr. WARDER success in his undertaking.

Pennsylvania Horticultural Society.

At the November exhibition, there was a fine display of Green-house plants, Fruits and Vegetables, which drew a large attendance of visitors. A vote of thanks was tendered to Mrs. JOHN R. LATIMER, for her liberality in relinquishing to the society, the many premiums awarded to her for years past. The PRESIDENT took occasion to address the society on topics of interest, in which he portrayed the beuefits resulting to the public by the association, furnishing a concise history, and exhibiting its operations from the commencement, throwing out many valuable suggestions, and concluding with a desire for its prosperity and prolonged usefulness.

At the December meeting, owing to the severity of the weather, the exhibition was less interesting than usual. Among the plants exhibited, was a most beautiful and fragrant air plant, from the President, new, and shown for the first time. Of fruits there was a dish of magnificent pears, supposed Beurre Easter, from the garden of Wm. V. Pettit. Also a dish of Beurre Easter from H. W. S. Cleaveland, Burlington, and Echassery and St. Germain Pears, from Tho. Hancock, Burlington. The usual premiums were awarded.

The library committee submitted their annual report on the state of the library, by which it appears that seventy volumes have been added during the year, and that the library contains nine hundred and twenty volumes on appropriate subjects.

The Treasurer submitted his semi-annual statement.

The Secretary remarked that it was with satisfaction, that he was instructed to inform the Society that the President had, to supply a deficiency experienced in the distribution of premiums, in cases where medals were desired in lieu of money, made arrangements for executing a set of dies, which he designed as a present to the Society; whereupon, on motion, ordered that the thanks of the Society be tendered for the acceptab'e gift.

The committee for establishing premiums reported a schedule for the ensuing year, which after several amendments, was adopted.

A special committee for nominating officers to be elected at the approaching anniversary, was originated. Also a committee to take into consideration, the accommodations for the stated meetings and exhibitions of the Society, and report.

T. P. JAMES, Recording Secretary.

Foreign and Miscellaneous Notices.

Domestic Life in Germany.—"There is certainly a kind of simplicity about these Germans, which one does not see in America," I thought to myself, as I sat in my friend's parlor, in a comfortable house, looking out over the Alster. It was the house of a man of fortune, a retired merchant; yet the whole, though bearing marks of a cultivated taste, showed a very remarkable plainness. The parlor in which I sat—a high, handsome room, with prettily-painted ceiling and tasteful papering—had no carpet. The furniture was plain; there was no grand display of gilt and crimson anywhere; and it was evident very little had been laid out on mere splendor. Yet one could not but notice how carefully even very common implements had been chosen with reference to grace of form. The candle-stands, the shade-lamps, and even the pitcher, or the common vase, had something exceedingly graceful and almost "classical" in their shape. The pictures on the walls or the table were not expensive—often mere sketches; yet they were very pleasant to look at, and had not been placed there, evidently, merely because "pictures *must* be hung in every respectable parlor." The groups of the daguerreotype showed the same traits; not formidable ranks of stiff forms, but easy groups around some animal, or in some natural position. There were flowers, too, everywhere; and especially that most graceful of all flower-pots, which I have seen alone in Germany, though I believe it came from Italy, called the "*Ampel*." It is simply a half vase, very much like the old Grecian *lamp*, hung with cords from the ceiling, with some flowering vine in it, which twines and wreaths around it; yet the beauty of it all can hardly be imagined. Perhaps the only exception in this house to the general good taste, was the high white Berlin *stove*, looking like a porcelain tower with gilt battlements; but possibly one who is accustomed to our quiet, sombre machines, must need a little discipline to get used to these gay articles.

Nearly every house I have visited in Hamburg has been without carpets, though of course many are so only during the summer. One notices the same kind of simplicity everywhere. People do not spend as much money as those of the same rank would in America. Men of the higher classes travel in a way a *gentleman* would be ashamed to with us. In my mode of traveling I have gone much in the third-class cars and cheap conveyances, and I have been surprised at the respectable class of persons one finds in them, in company with the "*Baner*." Students, you know, in Germany always take the third-class cars. It was only the other day that, traveling in this way, I met a gentleman from one of the first literary families of Germany, a personal friend of Chevalier Bunsen, who evidently thought it no more strange that he should economise by traveling with the peasants, than that he wore woolen instead of satin. I talked with him a little in regard to it, and he said he was thankful "there were very few circles yet in Germany where poverty was a disgrace!" This gentleman meant to live in one of the principal cities of Prussia, and have, as he said, "all the pleasures of a gentleman," such as music, and the enjoyments of arts and society, for about $200 a year! And I am disposed to think, from all my observation, that throughout Europe the middle classes spend less money, and are contented to retire from business with less, than the same classes in our country. Of course, when one comes to the higher classes no comparison can be made. But among the lawyers, and merchants, and literary men, there is much less money circulating, and it is made with considerable more difficulty; so that naturally there would be a difference in the spending of it. I have heard Americans sometimes call the Germans mean in money matters, but I think it has been from an ignorance of this fact. For certainly in all that belongs to hospitality, and kind, liberal treatment of strangers, they are beyond any people I have ever met. But the more I see them, and especially those of the cultivated classes, the more I am surprised at this trait I mentioned above—this simplicity, and this open-hearted good nature, or "*Gutmuthigkeit*," as they call it. For all these qualities are connected, and they certainly give an aspect to the German character which scarcely any other nation has. I have sometimes thought something of the same traits appeared in their literature, one finds so little subtle wit or humor in it; and when wit does appear, it is so broad or grotesque that one could hardly call it wit. For instance, no *Punch* could ever be sustained among the Germans at the present day; and I believe no satirist like either Swift or Dickens has ever appeared among them. I am not disposed to attach quite as much value to this "good nature" of the Germans as I did once. It seems rather the result of circumstances than of any hard struggle with "bad nature." The nation has long been in a situation where they were shut out from many of the most absorbing and intense struggles of life; and their activity has expended itself very much on abstract subjects. They have become easy and good-natured because there was so little to disturb them. However, this is mere theorising, and may be taken for what it is worth.

We should remember in regard to the economy of the Germans, that it is not a mere attempt to save money for the sake of *saving*.

It seems to be merely the choosing of one class of pleasures rather than another. The *Hausfrau* prefers being without an expensive carpet for the sake of having many tasteful objects around her, or that she may have more means for social company. The gentleman goes on the fore-deck of the steamboat, so that he may have more money for the next concert, or may be able to fill his library better.

There is very much in Hamburg which has interested me, beside the people. I had no idea from travels how much there was in it quaint and striking. The quiet old streets, like those of the Dutch cities, with canals and shade-trees, and fantastic gables on the houses, and rather anomalous statuary in the niches of the walls in the "old city," contrasting so strangely with the bustling, grand new streets. For you know about eight years ago a good part of Hamburg was burnt down, and this has all been built up in really a most splendid manner. I have seen no city in Europe whose business-streets make so fine an impression at first sight. Stone is very scarce here, so that nearly all the houses are built of brick, with a hard cement or stucco over. Either the climate is more favorable, or it is a much better cement than with us, but certainly the stuccoed houses look far better than in our cities. And it has afforded an opportunity for something which is extremelyneeded in our country, that is, giving to each house its own peculiar ornament. One becomes so heartily tired of those long rows of monotonous houses, exactly corresponding to each other, without an attempt at variety or character. Here I have passed through streets of high, handsome houses, where they had all the advantage which ours have—and undoubtedly it is an advantage—of a succession of similar lines on the front, one above the other; but, besides, peculiar independent ornaments to each building, every house had a character. Every man could show his own peculiar taste on the front of his home. And this cement gives a beautiful opportunity for all kinds of graceful molding and ornament, and even for small statuary. The Hamburgers have certainly improved it well. Mr. Sindley, a prominent English engineer here, has been "the genius" of all these improvements. I have had the pleasure of meeting him frequently, and the account of all his efforts, his attempts to stop the progress of "the great fire" by the general blowing up of buildings; his struggles with the lower classes, who at first believed him almost a demoniac man, plotting the destruction of the city; his gigantic plans for rebuilding, and his endeavors to inspire the Germans with something of the English practical spirit, would altogether form an interesting history in itself.—C. S. *in the Independent.*

Analysis of the Apple.—A critical and elaborate analysis of the apple has recently been made by Dr. Salisbury, of Albany, the results of which are of deep interest to farmers, as throwing light upon the composition of this most important of all fruits. Much attention has within a few years been directed to the subject of feeding apples to stock, and a though many well authenticated instances are given, where this fruit has proved exceedingly valuable, especially for fattening hogs, yet many are incredulous as to its possessing sufficient nutritive properties to render it a profitable crop to cultivate expressly for that purpose. The facts elicited by Dr. Salisbury, go to show that while apples contain about 3 per cent. more of water than the potato, yet "in the aggregate amount of fat-producing products, they do not materially differ."

Six varieties were submitted for analysis: the *Talman Sweeting, Swaar, Kilham Hill, Roxbury Russet, English Russet*, and *R. Island Greening*. Of the five last named, the mean of the analyses of the ash is as follows:

	With Carbonic acid.	Without Carbonic acid.
Carbonic acid	15.210	
Silica	1.362	1.637
Phosphate of iron	1.336	1.593
Phosporic acid	11.252	13.267
Lime	3.442	4.199
Magnesia	1.400	1.669
Potash	31.810	37.610
Soda	20.810	24.799
Chlorine	1.822	2.169
Sulphuric acid	6.062	7.229
Organic matter thrown down by nitrate of silver	4.890	5.828
	99.396	100.000

"The percentage of ash in the apple is small yet rich in phosphoric and sulphuric acids, potash, and soda. 1000 lbs. of fresh apple contain about 827 lbs. of water, 170.4 lbs. of organic matter, destroyed by heat, and 2.6 lbs. of inorganic matter, or ash. 1000 lbs. dry apple contain between 17 and 18 lbs. of ash—100 lbs. of apple ashes contain, when deprived of carbonic acid, about 13 lbs. of phosphoric acid, 7 lbs. of sulphuric acid, 38 lbs. of potash, and 25 lbs. of soda: these four bodies forming about 83 per cent. of the whole ash."

The mean of the proximate organic analyses of the six varieties is as follows:

	1000 parts of fresh apple.	1000 parts of dry apple.
Cellular fibre	32.00	190.579
Glutinous matter, with a little fat and wax	1.94	11.463
Dextrine	31.44	186.805
Sugar and extract	83.25	497.627
Malic acid	3.17	19.585
Albumen	13.79	83.720
Casein	1.64	9.921
Dry matter	167.26	1000.000
Water	826.64	
Loss	6.10	
	1000.00	1000.000

"The ripe apple is rich in sugar and a body analogous to gum, called *dextrine*, which has the same composition as starch, but differs from it in being soluble in cold water, and not colored blue with iodine. Dextrine and gum should not be confounded with each other. They

differ very materially in many respects. Dextrine belongs to a class of bodies which are susceptible of nourishing the animal body. All the starch taken as food is converted into dextrine before it is assimilated by the system. The acids of the stomach possess the property of converting starch into this body.

"In the fresh apple, 100 lbs. contain about 3.2 lbs. of fibre; 0.2 of a lb. of gluten, fat, and wax; 3.1 lbs. of dextrine; 8.3 lbs. of sugar and extract; 0.3 of a lb. of malic acid; 1.4 lbs. of album; 0.16 of a lb. of casein; and 82.66 lbs. of water.

In the fresh potato, 100 lbs. contain about 9.7 lbs. of starch; 5.8 lbs. of fibre; 0.2 of a lb. of gluten; 0.08 of a lb. of albumen; 0.45 lbs. of casein; 1.27 lbs. of dextrine; 2.6 lbs. of sugar and extract; and 79.7 lbs. of water.

By comparing the composition of the apple with that of the potato, it will be noticed—first, that the former contains, according to the analysis, about 3 per cent. more of water than the latter.

Second, that dextrine and sugar in the apple take the place of starch, dextrine, and sugar, in the potato. Of the former, 100 lbs. of good fruit contain of dextrine, sugar, and extract, 11.4 lbs.; the latter has, in the same amount of tubers, 13.61 of starch, dextrine, sugar, and extract. The above proximate principles are the main bodies in the apple and potato which go to form fat. In the aggregate amount of fat-producing products, it will be seen that the apple and potato do not materially differ. It would be natural, however, to infer that 50 lbs. of dextrine and sugar would, if taken into the system, be more likely to make a greater quantity of fat in a given time, or at least, to make the same amount in a shorter period, than an equal weight of starch; for the reason, that the two former bodies, although nearly the same in composition with the latter, yet are physically farther advanced in organization, and hence probably approximate nearer the constitution of fat. If this view be taken, then the apple, if of good quality, may be regarded equally if not more rich in fat-producing products than the potato.

Thirdly, that the apple is richer in nitrogenous compounds than the potato. 100 lbs. of fresh apple contain of albumen, 1.38 lbs. The same amount of fresh potato has one-fourth of a pound. 100 lbs. of dry apple contain 8.37 lbs. of albumen, and an equal weight of dry tubers has 1¼ lbs. 100 lbs. of fresh fruit contain of casein, 0-16 of a lb.; and an equal weight of fresh tubers, 0.45 of a lb. Hence it will be observed that 100 lbs. of fresh apple contain of albumen and casein, 1.54 lbs.; and the same quantity of fresh potato, 0.7 of a lb.

From the above it will be seen that in albumen the apple is richer than the potato, while in casein the reverse is the case—that the aggregate amount of albumen, casein and gluten, in good varieties of the apple, is more than double that of the same bodies in the potato. Hence, the former may be regarded richer than the latter in those bodies which strictly nourish the system; or, in other words, to form muscle, brain, nerve, and in short, assist in building up and sustaining the organic part of all the tissues of the body.

The juice of the apple forms what was regarded not long ago a favorite and almost necessary appendage to the farmer's stock of winter luxuries. It is now, however, looked upon by him with comparative indifference as a beverage, he having found a far better and more profitable use for his apples, that of converting them into fat instead of alcohol. The juice of the apple after being fermented, is called cider, and contains much of the nutritive matter of the fruit. Cider contains alcohol, sugar, gum or dextrine, malic acid and the phosphates and sulphates of the alkalies, with a little tannic and gallic acids. The juice before being fermented, has in addition to the above ingredients, albumen and casein." *Genesee Farmer.*

MAMMOTH GRAPE-VINE.—All the world, at least all that part of the gardening world which inhabits Great Britain, has heard of a surprising Vine at Hampton Court. Everybody goes to see it at least once in his life; it is a separate and special object in the grounds of the old palace, kept under lock and key, as it well may be, unless its fruit is abandoned to the refreshment of her MAJESTY'S loyal subjects. To account for the immense crops of Grapes borne by this Vine, and for its vigorous old age, it has been stated that its roots are in an ancient sewer, where they find abundance of the rich materials, out of which the Vine prepares sugar and acid, and color and fragance, and all that gives deliciousness to its fruit. In 1837 it was reported to have borne 800 lbs. of fruit, upon a roof consisting of 2304 square feet.

It is a mistake however to regard this famous Vine as the most remarkable specimen of the kind in Great Britain. Within a few miles of it may be found one yet more striking. In the royal garden of what was once Cumberland Lodge, near Windsor, there stands a solitary Vinery, sole relic of departed greatness, concerning which we have the following account from an experienced Grape-grower who lately visited it.

"We have been astonished, much more than instructed, by the numerous systems which have of late years appeared for Grape-growing; when we thought that we had found a roc's egg, something suddenly appeared to dim our vision. The object fled, our faith vanished, and we found ourselves again where we were. One successful cultivator recommended the borders to be concreted beneath, and asphalted above; the first to prevent the roots getting downwards, and the second to carry off the rains. An unsuccessful writer condemned the one as unnatural, and the other unnecessary; the first, because the drainage would be incomplete, and

the second, as obstructing the action of the sun on the border. Another gentleman insisted upon robbing the dog kennel, and feeding Vines upon horseflesh, animal manure being more potent than vegetable. Nevertheless, to our astonishment, an experienced cultivator plants his Vines in his roadway, formed of clinkers, brickbats, and similar rubbish, and ripens most satisfactorily two crops of Grapes in a season. Another gentleman, who set himself up as a great authority, insisted—in fact, wrote a book about it—that good grapes could only be grown by having their roots cemented in a brick pillar. Mystery after mystery presents itself, and not the least appears when we stumble upon the great Vine at Cumberland Lodge. This monster, loaded with 2000 large bunches of Grapes, as black as Damsons, must surely have had some leviathan 'practical' to cook his border. Let us read its history. Some 50 years ago it was found in a small Cucumber pit. The plant seemed to like its situation, for it soon outgrew this limited abode. It became necessary to extend the shelter; and this has been twice done, until the pit, for it can hardly be called a house, is 138 feet long, and 16 feet wide. Incredible as it may appear, the stem of this Vine measures 2 feet 9 inches in circumference; and when we saw it about a month ago, this immense crop was ripe, the bunches were large, so were the berries; besides, they were black, not brown, and the foliage as vigorous and green as in June. The entire aspect of this house presented a perfect and most instructive whole. There were no brown bunches here and black ones there—no missing at one end of the rafter, and clustering and huddling at the other. It would, in fact, have defied mechanical skill to have distributed the bunches with greater regularity. The size of the bunches, likewise, was nearly uniform—not a shaggy one here and a monster there; for, as we find Stilton cheeses, so these were nearly of one weight and make.

"Now we come to the great problem which is to resolve all this wonderful development—the border; and, by Mr. INGRAM's kindness, we were permitted to dig several holes, to ascertain its composition, its mechanical construction, and to ponder upon the wisdom and foresight of some great royal gardener. We did for a moment entertain the idea that one of the craft, adorned with a blue apron, bearing mysterious wisdom in his countenance, and practice in his whole deportment, must have been concerned in an undertaking which has produced such marvellous results. We entered upon our task, then, under the impression of revealing to the world a grand secret, and so we shall. Without difficulty or serious obstruction we readily got through 2 feet of common garden soil; neither encountering a brickbat nor a clinker, a horse's leg nor a bullock's head. There was no evidence of compound manures or simple quackery; the ground was as natural as if it had remained untouched since the Deluge; for immediately beneath this 2 feet of ordinary soil we came upon blue clay! —with a portion of sand intermixed with it. Such clay, indeed, as we should be glad to run against, were we about to form a pond and in want of puddle!"

It is 12 years since we last saw this plant, but it then promised to become all that it is now described to be; the circumstances under which it grew are fresh in our recollection, and entirely confirm our correspondent's description; a mass of the gravel and clay over which it grows is before us, and is too hard to be broken by the hands; a sample of its beautiful fruit was exhibited at the last meeting of the Horticultural Society in Regent-street, and wholly answered to the character just given of it.

Here, then, a Vine, whose roots are not in a sewer or any such place, but in ordinary garden ground, resting on a coarse hard gravelly clay, covers about the same space as its celebrated rival, and bears twice as many Grapes, of the highest excellence. Surely we have in this a striking example of the folly of spending large sums in preparing vast borders out of costly materials, of which the Vine has no real need. No doubt the Vine border at Cumberland Lodge was prepared originally from good materials, such as our predecessors thought suitable to its nature; and that amount of preparation was necessary, in order to enable it to establish itself securely in the earth. But for this a small quantity of materials was sufficient; and, once established in soil that it likes, the Vine needs little further care. Its chief desire is to have a WARM, LIGHT, DRY, SHALLOW border, and that is precisely what it gets at Cumberland Lodge.—*Gardeners' Chronicle.*

PLANTING ROSES.—The beauty and interest which a garden affords depend greatly upon the disposition of its individual parts, even the arranging and planting of a single bed require experienced taste, in order to produce effective display. Take, for example, a Rose bed; imagine the kinds to be indiscriminately mixed, and no attention to have been paid to their respective heights, and the effect produced by such a medley assemblage will be immediately felt by any person possessing taste, and accustomed to observation. Let us farther suppose such a bed to be circular, and the effects will be as bad as it well could be, unless the object aimed at was to represent wild nature. The taller plants should have been placed in the center, and the others arranged so as gradually to fall to the outer rim. This arrangement would advance us a step; but let us proceed further, and dispose of the trees in zones or circles. In this way we give the bed the expression of design. For be it clearly understood that we are discussing gardening in an artificial sense. Now let us go a little further still, and consider whether there be not yet room for improvement; suppose we plant one color in the center circle, and so change each circle until

we reach the outer one. By such a classification we add color as well as design; but imagine the colors to be so arranged that another important feature is produced, viz., contrast, and the picture becomes still further improved, though not yet finished. Would not an edging render the whole more complete? The beauty and brilliancy of the Rose would be singularly improved, and relieved by an evergreen margin. This would in some measure help as it were to lift the group from the earth, and place it nearer the eye. This edging may be of Ivy or Cotoneaster microphylla or Pernettya mucronata, or in fact any low dwarf evergreen shrub kept shorn into a formal rim.

In the above I have shown how much beauty may be exhibited even in a circular bed, by the exercise of a little taste and forethought; but these simple principles are by no means confined to a Rose bed; they can be carried out in every matter relating to the arrangement of a garden, so that unity and comprehensiveness of design may characterise the whole. When a contrary state of things prevail, delight vanishes, confusion takes the place of order, disgust that of pleasure; and instead of the most charming of all pursuits, contributing to relieve the man of business from the oppressions and satieties of mind usually resulting from close application, he abandons the whole in utter dismay and hopelessness.—*Ib.*

The Plum as a Pyramidal Tree.—For some few years I have amused myself by forming my Plum trees into pyramids, feeling convinced that no other mode of cultivating our hardy fruits is so eligible for small gardens. I was induced to take extra pains, on account of observing that our neighbors the French, so famous in their cultivation of pyramids, failed to a certain extent with the Plum; as their trees, I observed, on being pruned to that shape made too vigorous shoots, and were inclined to gum. They do not know the value of root-pruning, and will not listen to it; I do, and therefore felt some hope of success. At first I commenced to root-prune once in two or three years, but I soon found that was not enough, for the Plum makes roots so rapidly that it is difficult to check it; I have now, therefore, for the last three years root-pruned annually, early in autumn. My success is perfect; this I have generally done in September, soon after gathering the fruit, but this year not having any fruit, and awakened by your article on "Summer Root-Pruning," given in *Gardener's Chronicle* in July, I operated on them in August; the trees almost immediately went to rest, and are now pictures of forthcoming fruitfulness. The operation is so simple, that any one may exercise it without any fear of failure. Let me attempt to describe it; and yet how irksome it is to have to employ so many words about what one can tell and do in a few minutes. Open a circular trench, 18 inches deep (for the Plum does not root deeply) round by one tree 18 inches from its stem; for the first two or three years this distance will be enough; increase the diameter of the circle as years roll on, but very slowly, not more than from 1 to 2 inches in a year, and cut off every root and fibre with a sharp knife. This operation may be likened to the manner in which old folks talk of the way in which they used to cut the hair of poor workhouse boys, viz., place a basin on the boy's head and trim off the hair round its rim —in short, the "workhouse cut;" then when your roots are so trimmed, introduce a spade under one side of the tree and heave it over, so as not to leave a single tap root. Fill in the mould; if the weather is dry give the tree a soaking of water, and it is finished. If your soil is poor, give a top-dressing of manure, to be washed in by winter rains. The following summer pinch off the ends, in June, of any shoots that seem inclined to push more than 4 inches, and thin those out with the knife that are too crowded; the result will be a handsome and highly prolific pyramidal tree. Plums are not yet half appreciated; for, owing to the introduction of many new and good varieties, they are in season from July till November, for the dessert and for the kitchen.—*Ib.*

Conjectures as to the Mode in which the Earth was originally clothed with Plants. —It is an interesting question to determine the mode in which the various species and tribes of plants were originally scattered over the globe. Various hypothesis have been advanced on the subject. Linnæus entertained the opinion that there was at first only one primitive center of vegetation, from which plants were distributed over the globe. Some, avoiding all discussions and difficulties, suppose that plants were produced at first in the localities where they are now seen vegetating. Others think that each species of plant originated in, and was diffused from, a single primitive center, and that there were numerous such centers situated in different parts of the world, each center being the seat of a particular number of species. They thus admit great vegetable migrations similar to those of the human races. Those who adopt the latter view, recognise in the distribution of plants some of the last revolutions of our planet; and the action of numerous and varied forces which impede or favor the dissemination of vegetables in the present day. They endeavor to ascertain the primitive Flora of countries, and to trace the vegetable migrations which have taken place. Daubeny says, that analogy favors the supposition that each species of plant was originally formed in some particular locality, whence it spread itself gradually over a certain area, rather than that the earth was at once, by the fiat of the Almighty, covered with vegetation in the manner we at present behold it. The human race rose from a single pair, and the distribution of plants and animals over a certain definite area, would seem to imply that the same was the general

law. Analogy would lead us to believe that the extension of species over the earth originally took place on the same plan on which it is conducted at present, when a new island starts up in the midst of the ocean, produced either by a coral reef or a volcano. In these cases, the whole surface is not at once overspread with plants, but a gradual progress of vegetation is traced from the accidental introduction of a single seed, perhaps of each species, wafted by winds, or floated by the currents. The remarkable limitation of certain species to single spots on the globe, seems to favor the supposition of specific centers. Professor E. Forbes says, the hypothesis of the descent of all the individuals of a species, either from a first pair, or from a single individual, and the consequent theory of specific centers being assumed, the isolation of assemblages of individuals from their centers, and the existence of *endemic* or very local plants, remain to be accounted for. Natural transport, the agency of the sea, rivers, and winds and carriage by animals, or through the agency of man, are insufficient means in the majority of cases. It is usual to say, that the presence of many plants is determined by soil or climate, as the case may be; but if such plants be found in areas disconnected from their centers by considerable intervals, some other cause than the mere influence of soil or climate must be sought to account for their presence. This cause he proposes to seek in an ancient connection of the outposts or isolated areas with the original centers, and the subsequent isolation of the former through geological changes and events, especially those dependent on the elevation and depression of land. Selecting the Flora of the British Islands for a first illustration of this view, Professor Forbes calls attention to the fact, well known to botanists, of certain species of flowering plants being found indigenous in portions of that area, at a great distance from the near assemblages of individuals of the same species in countries beyond it. Thus, many plants peculiar in the British Flora to the west of Ireland, have the nearest portion of their specific centers in the north-west of Spain; others, confined with us to the south-west promontory of England, are, beyond our shores, found in the Channel Isles and the opposite coast of France; the vegetation of the south-east of England is that of the opposite part of the continent; and the alpine vegetation of Wales and Scotch Highlands is intimately related to that of the Norwegian Alps. The great mass of the British Flora has its most intimate relations with that of Germany. He believes, therefore, that these isolated outposts were formerly connected together by chains of land, and that they have been separated by certain geological convulsions. Islands may be considered as the remains of mountain chains, part of the Flora of which they still exhibit, and the further they are from continents, the more likely are the plants to be peculiar.—*Balfour's Man. Bot.*

Singular Electrical Phenomena.—Prof. Loomis has submitted a paper to the American Association for the advancement of Science, on some remarkable electrical phenomena exhibited in New-York. He states that for months in succession, electrical sparks, accompanied by loud snaps, have been observed in several houses.

"A stranger on entering one of these electrical houses, in attempting to shake hands with the inmates, receives a shock which is quite noticeable and unpleasant. Ladies in attempting to kiss each other are saluted by a spark. A spark is perceived whenever the hand is brought near to the knob of a door—the gilded frame of a mirror—the gas pipes—or any metallic body—especially when this body communicates freely with the earth. In one house which I have had an opportunity to examine, a child in taking hold of the knob of a door received so severe a shock that it ran off in great fright. The lady of the house in approaching the speaking tube to give orders to the servants, received a very unpleasant shock in the mouth, and was very much annoyed by the electricity until she learned first to touch the tube with her finger. In passing from one parlor to the other, if she chanced to step upon the brass plate which served as a slide for the folding doors, she received an unpleasant shock in the foot. When she touched her finger to the chandelier (the room was lighted with gas by a chandelier suspended from the ceiling) there appeared a brilliant spark and a snap as in the discharge of a Leyden Jar of good size. In many houses the phenomena have been so remarkable as to occasion general surprise and almost alarm."

After a careful examination, Professor L. has come to the conclusion that the electricity is excited by the friction of the shoes of the inmates upon the carpets of the houses. He observes:

"By skipping once or twice across a room with a shuffling motion of the feet, a person becomes highly charged, and then upon bringing the knuckle near to any metallic body, particularly if it have good communication with the earth, a bright spark passes. In almost any room which is furnished with a woolen carpet, and is kept tolerably warm, a spark may thus be obtained in winter—but in some rooms, the insulation is so good and the carpets are so electrical, that it is impossible to walk across the floor, without exciting sufficient electricity to give a spark."

Fruitfulness promoted by late Pruning.—By pruning at the rising of the sap, we induce in trees, barren through over-luxuriance of growth, a flow of that sap from the roots, which produces vigor. What I call the fertilizing sap is at that time not yet formed, since the leaves which are its organs of formation, do not yet exist; the wood growth which is made in the early spring, is owing then, entirely to the sap

of the roots. It is only when the buds are already considerably developed, and the leaves have acquired some consistency, and their *stomata* or breathing pores are well organised, that the growth takes place which directly forms fruit-buds. Having admitted the fact that the first flowing sap of the roots determines the vigor or health of the tree; all diminution of this increases then the relative proportion of the sap of the leaves, [rather the sap elaborated by them] and consequently, the chances of fructification. To render this operation more efficacious Mr. RUBENS makes, at the time of the risings of the sap, a first pruning, which removes all badly-placed or superfluous branches, and afterwards he thins out the buds upon the more feeble shoots.

This early pruning hastens the starting of the tree and makes it vigorous. Thus in diminishing, previous to the rising of the sap, the number of buds that it is to nourish, those which remain receive along with the sap originally destined for them, that also intended for buds which were removed; the shoots are consequently more vigorous, and are developed sooner, because a great increase of sap causes a more prompt development of the buds than a less abundant flow. On the contrary a late pruning weakens and retards the tree, although it disposes it to bear fruit; for the sap of the roots in the early spring is carried directly to the terminal bud and to those nearest to it. In a late pruning those buds are removed to which was directed the largest supply of sap; a great loss of sap is thus effected, so that all that preponderance of sap calculated to produce excess of growth being lost, the fructifying food collected or digested by the leaves, has the preponderance; moreover, this method retards vegetation, since the tree is deprived of its most vigorous and advanced limbs, and some time must elapse before the buds which remain can reach the same condition as those which were cut off; by this delay, the flowering time is also retarded, and consequently the tree has less risk to suffer from the sudden variations of spring temperature.

Thus, it is by impairing the strength and vigor of the tree, that a late pruning makes it fruitful.

It should be remarked, that late pruning should only be employed upon very vigorous, healthy subjects. We have seen it applied to vines of only moderate vigor, and although it preserved their shoots from a late frost, yet, the following year, their crop was a feeble one from being exhausted the year before. It may, besides, answer to restore an equilibrum in a tree, whatever its shape, by an early pruning of the feeble branches and a late one for those which are too vigorous. M. A. PUVIS.—*Revue Horticole.*

NEW GRAPE.—There is nothing that people swallow so greedily as a fine tale about a new Grape. Not that the public appetite has become languid towards other novelties, but that a peculiar voracity is shown whenever a Grape with new qualities is said to make its appearance. We must, therefore, take care, as far as in us lies, that our worthy friends are guarded with especial care against the magnificient exaggerations with which what purports to be a new variety of this fruit is introduced to the notice of their purses.

We are assured in the *Annales de la Societe Royale d' Agriculture, &c., de Gand,* that a Grape of marvellous goodness, and quite new, was exhibited in September 1848, at the Belgian Agricultural and Horticultural exhibition. It is described and figured in the above mentioned publication, p. 415 of the volume for 1848, under the name of the Raisin Royal de Craan. It is a white variety, the flesh of which is described as being "exceedingiy juicy, extremely high flavored, sugary, and perfumed *with an indescribable aroma, which is not that of the Muscat, nor that of the Isabella Grape, but one peculiar to itself, and which must be tasted, in order to form any idea of it!*" This Grape, it is stated, could bear comparison with those sent from Windsor to the King of the Belgians. Its origin had not been satisfactorily ascertained by the author of the article.

We owe to the kindness of M. de JONGHE, of Brussels, a bunch of this Grape, and additional details respecting it. He says that the original plant is 13 years old, and was raised from seed of a "Raisin Muscat;" that it is growing in the garden of Mademoiselle HENDRICK, a lady residing at Kinsendaele, a village about a league and a half from Brussels; that in 1848 a bunch of it was given to a gardener of the name of DE CRAAN, of Brussels, who obtained a prize for it, and it was then figured. In September last another bunch was exhibited by Mdlle. HENDRICK, and for this a prize was also awarded. If considered to be really deserving of cultivation, and if indeed new, Mdlle. HENDRICK intends devoting the proceeds of the sale to some charitable purpose.

It is impossible not to appreciate the kind-hearted spirit in which this lady proposes to apply the produce of her Grape to benevolent objects; and we have no doubt that the public would readily second her intention, if the Grape were what it purports to be. But we regret to add that her expectations are doomed to disappointment.

When received, many of the berries were bruised and decayed, owing to the bunch having been too loosely packed in cotton, and, in forming an opinion of what the Grape is, this circumstance had to be taken into consideration; but after making full allowance for all defects arising in this or any other way, we come to no other conclusion than that this *Raisin Royal De Craan* is neither in flavor, nor in any respect of the least importance, different from the common Muscat of Alexandria! It must be admitted that it is not so good, but all Grape growers know that the Muscat itself varies ex-

tremely in quality according to the manner in which it is treated.

We are sure that our readers will be greatly obliged to M. de Jonghe for having given us the means of preventing much disappointment to all parties by thus pointing out the true character of a variety, which, in the absence of such an examination, would soon have found its way into the market as a great novelty, with a very fine name, and with a price high in proportion to the skill with which it would have been puffed.—*Gardeners' Chronicle.*

The Roots of Plants.—It is long since we paused from our observations on the science of gardening, but we will now resume (from vol. iii. p. 330) our remarks relative to the *roots* of plants.

We have seen that plants search after and acquire food by the agency of their roots; and the extremities of these appear to be the chief, if not the only parts employed, in the sucking-in of all food not in a gaseous state, for M. Duhamel observed that that portion of a soil was soonest exhausted in which the greateet number of the extremities of the roots were assembled. (*Physique des Arbres*, vol. iii.)

M. M. Sennebier and Carradori found that if roots of the carrot, scorzonera, and radish are placed in water, some with only their extremities immersed, and others with their entire surfaces plunged in, except the extremities, the former imbibe the water rapidly, and the plants continue vegetating; but the others imbibe no perceptible quantity, and speedily wither. It suggests also the reason why the gardener, in applying water or manure to trees or shrubs, does so at a distance from their stems. A good rule for ascertaining the proper distance for such applications, seems to be to make them beneath the circumference of the head of the tree; for, as M. De Candolle observed, there is usually a relation between that and the length of the roots, so that the rain falling upon the foilage is poured off most abundantly at the distance most desirable for reaching the extremities of the roots.

This explains why the fibrous points of roots are usually annually renewed, and the caudex (or main limb of the root) extended in length: by these means they each year shoot forth into a fresh soil, always changing their direction to where most food is to be obtained. If the extremity of the root is to be cut off, it ceases to increase in length, but enlarges its circle of extension by lateral shoots.

The distance to which the roots of a plant extend is much greater than is usually imagined; and one reason of the stunted growth of plants in a poor soil is, that the sap collected and elaborated by them has to be expended in the extension of the roots, which have to be larger in proportion as the pasturage near home is scanty. An acorn accidentally deposited on a wall produced a young oak; but this made no progress until its root had descended the whole height of the wall, and had penetrated the soil at is base.

In deep, poor siliceous soils we have traced the roots of trees from twelve to fourteen feet perpendicular without reaching their termination. Those of the Canada thistle, seven feet; common fern, eight feet; wheat, thirty inches; oats twenty-four inches; potatoes, eighteen inches; onions, twenty inches; carrots, parsnips, and beet, two feet. The distance to which roots will travel, and their tenacity of life, render them often very obnoxious to the gardener. Thus the common couch grass (*Triticum repens*) is the most troublesome of weeds, for every fragment of its far-spreading roots will vegetate; and the sweet-scented coltsfoot and lemon mint are not less to be avoided, for the same cause renders them extremely difficult of extirpation, and they never can be kept within moderate bounds. Yet these creeping rooted plants are not to be condemned without exception; for whoever has grounds under his care bordering upon the sea-shore, the sands of which are troublesomely light and shifting, may have them effectually bound down by inoculating them with slips of the root of these grasses, *Elymus arenarius*, *Carex arenaria*, and *Arundo arenaria*.

The roots of plants, unless frozen, are constantly imbibing nourishment, and even developing parts; for if the roots of trees planted during the winter be examined after an interval of a few weeks, they will be found to have emitted fresh raidcles.

It is by their extremities, then, that roots imbibe food; but the orifices of these are so minute, that they can only admit such as is in a state of solution. Carbon reduced to an impalpable powder, being insoluble in water, though offered to the roots of several plants, mingled with that fluid, has never been observed to be absorbed by them; yet it is one of their chief constituents, and is readily absorbed in any combination which renders it fluid.

Roots then must obtain from a soil nourishment to plants in a gaseous or liquid state: we may next, therefore, consider what constituents of soils are capable of being presented in such forms. Water can be the only solvent employed; indeed, so essential is this liquid itself, that no plant can exist where it is entirely absent; and, on the other hand, many will exist with their roots in vessels containing nothing but distilled water. Plants with a broad surface of leaves, as mint, beans, &c., we have always found increase in carbonaceous matter, whilst thus vegetating; but onions, hyacinths, &c., with small surfaces of foliage, we, as invariably, have found to decrease in solid matters. The first, at all times, obtain nourishment by decomposing the carbonic acid gas of the atmosphere: the latter do so in a much smaller proportion: hence the reason why the latter are so much more impoverishing crops than the former, inasmuch as that they acquire nearly all their solid matter by means of their roots.

These observations explain the conflicting statements of Saussure and Hassenfratz on this point; the former experimented with broad-leaved plants; the latter on such as have small foliage. The first maintained that plants increase in solid content when their roots are supplied with water only; the latter denied the fact.—*Cottage Gardener.*

Roses in Pots.—In compliance with your permission and wish that I should inform you of the mode adopted by me in growing roses in pots, as specimen plants, and for exhibition at our local shows in the months of May and June, I will begin by observing, that the method does *not* in principle differ from that so ably laid down by Mr. Beaton in a recent number, but simply so as regards little matters of detail in the difference of time recommended for the necessary operations of pruning, re-potting, &c.; and hope you will excuse my being somewhat lengthy in my observations, as I feel that omitting the most trifling operation will sometimes hazard the success of an undertaking.

My first consideration in growing "roses in pots" is to procure some pots that are well cleaned, or, what is better still, quite new; and may here observe, that 24s are a very convenient size to commence with. I then, at the commencement of November, proceed to Messrs. Paul, of Cheshunt. Having recommended them many customers, I presume in consequence, and make, I believe, a somewhat unusual application to be allowed to select at once and take up such roses as I wish for the purpose,—a request which young Mr. Paul kindly accedes to, and accompanies me himself to assist in the selection. It is as well here to state, that experience shows me that worked roses are preferable, for pot purposes, to those grown on their own roots; and in consequence I select such as are dwarf standards only, and worked close to the collar, so that when the rose is potted the stem is scarcely visible. I also find that Tea, China, and Bourbon, or their hybrids, are better suited for forcing and pot plants than Noisette and Hybrid perpetuals, —the two last named class of roses growing to greater perfection in the open air. Amongst *Tea roses* I would recommend Saffrano, Devoniensis, Compte de Paris, Nephetos, and Princess Clementine as unrivalled. Mrs. Bosanquet, Dutchess of Kent, with a few others amongst *Chinas;* Souvenir de Malmaison, Leveson Gower, and Dupetit Thouars amongst *Bourbons.* Of the above, Souvenir de Malmaison is unrivalled as a pot rose. Having selected my plants, I without loss of time, and before the roots have got dry, pot them (having first pruned the strong roots) in a mixture of old cow-dung, leaf-mould, silver sand, and yellow loam, and the rest, as regards the cow-dung, leaf-mould, and sand, in equal parts; but find that a greater proportion of loam may be added with advantage, should the rose to be potted happen to be a Bourbon or Hybrid perpetual.

My plants being potted—which operation is complete about this time,—I place them on ashes under a north wall in some sheltered part of the garden, until the frosts of November compel me to put them in cold pits, keeping them, since their being re-potted, as dry as I can to prevent growth, but not sufficiently so to cause the plants to flag or their roots to get quite dry. I then, about the commencement of December, prune all that I intend bringing into the greenhouse in the early part of January, for blooming in May and June, and stimulate them gently by applying water at a temperature a few degrees warmer than the atmosphere of the pit where they still are, so as when they are introduced into the greenhouse at the commencement of January, at a medium temperature of 45°, they are just beginning to push strongly.

About the commencement of February a little more heat is given, and weak liquid manure is applied about twice a week, which is strengthened as the plants increase in vigour and have their buds well set. About this time syringing overhead with lukewarm water, or steaming, may occasionally be had recourse to, as it tends to give strength to the plants, and keeps away the aphis and other enemies. Lastly, when the shoots are sufficiently long for the purpose, they are gently brought down to the sides of the pot, or staked to such places as they are intended to occupy, so as when the plants are ready for the show, these appliances may be removed, and the plant still preserve a round and uniform appearance.

I had almost forgotten to add, that it is necessary at all times when temperature is at 50° or above, to give as much air as possible; and this may even be done when a gentle fire is going.—*Cottage Gardener.*

Drip in Frames and Pits.—There is, probably, no cause so injurious in its effects, especially at this time of the year, as drip in plant habitations, but more especially in cold frames and pits. Great care must be taken both to prevent it, and, when it takes place, to neutralise its almost murderous effects. Various schemes have been devised for the purpose, such, for instance, as gutters cut in the rafters and ribs of the lights, to convey the accumulated drops to a front pipe, and by this to be conveyed away outside; but the grand preventive is good glazing, and such an inclination of the lights as will send the condensed water off quickly, before it has time to collect into drops. If, therefore, the drip is observed to fall upon the plants, let the glazing be carefully examined and repaired; and the elevation, or angle of the glass, raised to the carrying-off pitch. Admission of air, on every favorable day, will dry up the drip, and help to cure the evil if it has occurred.—*Ib.*

Domestic Notices.

Oyster-Shell Lime.—While spending a few hours on Staten Island lately, we saw a simple and efficient mode of making oyster-shell lime, which we record for the benefit of such of our readers as have the opportunity to put it into practice.

Mr. Dunning, (for it is upon this gentleman's place that the thing is done,) builds up with rough stone walls, a circular kiln about 5 feet in diameter—just as you would stone up a well. A spot is selected on a side hill, where the slope of the ground is such that with a slight excavation the base of the kiln is exposed on the lower side. Here a small opening—a rude archway 18 or 20 inches wide and a little more in height—is left as a sort of furnace—to be filled with faggots, brush, stumps of trees, and the like rubbish to be had on almost every country place—over this furnace a few bars of iron are built into the wall, to hold up the first layer of oyster shells. In filling the kiln, a layer of oyster shells and a thin layer or sprinkling of the screenings of *anthracite coal* are put alternately, till the kiln is filled to the top—making in all a depth of some 4 to 6 feet. The fire is lighted among the faggots and rough wood below, and gradually spreads through the whole kiln—burning the oyster shells into excellent lime. When we say that oyster shells make the purest and best lime for all horticultural purposes, and especially for fruit trees, and that in most of our Atlantic towns they are wholly wasted, and though so easily burned in this way in these simple kilns, (which once made will last for a dozen years,) we think we offer a hint, which many subscribers will lose no time in profiting by.

The Sheldon Pear.—We received from Mr. W. S. Verplanck, of Geneva, N. Y., a box containing some samples of new seedling pears under this name. They were, as we learn, the product of several trees, all seedlings, bearing the strongest resemblance to each other, and all raised from seeds brought by Mr. Sheldon to Wayne co., from the farm of Judge Johnson, of Dutchess county, N. Y. The form and size is much like that of the Doyenne or Virgalieu, (which was probably the parent,) but with more of the flavor of the Brown Beurre, and a good deal of the russety greenish yellow skin of the latter pear. The flavor is something between the two first—and so far as we could judge from the product of a single season, is likely to take rank as a "very good" pear. The tree is said to resemble the Virgalieu in its growth. We shall hope to examine this variety next year, and report more fully upon it.

The Cushing Raspberry.—We learn from a pomological correspondent in Philadelphia, that plants of this fine new variety, originated by Dr. Brinckle, and figured in a previous vol. of this Journal, "were loaded with crops of handsome and fine fruit all the month of November." Its ever-bearing qualities were not, we think, known, when it was first described, and they add very much to its value.

Removing Trees in Winter.—*Dear Sir:* I owe you thanks for the hints about moving trees with frozen balls of earth. I began to put them in practice the beginning of this month, and have already moved twenty trees, Elms, Maples, and White Pines. These trees are from 18 to 30 feet high. I took them from the meadows and road sides where they stood alone—so that they have handsome heads. The latter I have shortened-in all over the tips of the branches. With three hands, a yoke of oxen and a low, strong sled, I found it quite an easy matter, and feel confident the trees will do well—as balls of earth five feet in diameter—containing nearly all the main roots—were taken entire with every tree. I am charmed with the effect so speedily produced—turning a bare site into one with the shelter and growth of eighteen or twenty years. The cost of removing the twenty trees, preparing the holes and all, is exactly $100. And I have expended no such sum on my premises so much to my satisfaction. A Constant Reader. *Philadelphia, Dec.* 17.

The American Holly.—The finest evergreen shrub or tree north of Mason & Dixon's line, and one which is most neglected—nay

which one never sees in a nursery, pleasure ground, or garden, is the American Holly. It is not a tender tree, for it grows in the eastern part of Massachusetts. And it is not a rare tree, for in New-Jersey, Maryland, and Virginia, the woods in many places abound with fine specimens, from six to thirty feet high. At this season of the year, nothing is more beautiful than these holly trees, laden with berries of the richest coral color, which contrast so finely with the fine green foliage. This, our native holly, is very much like the European, except the foliage is a lighter green and less glossy. It is also hardier. Yet it would probably be found difficult to purchase twenty plants of the American Holly in any nursery in America—consequently nobody plants it, and few people know any thing about it. We think it is so little planted, because it takes some years to raise it from seed, and nurserymen, therefore, neglect it for shrubs more easily turned into money, and partly because it requires a point or two of attention in establishing it. It does not grow well in open exposed sites, nor in heavy clayey soil. Choose a sheltered site—under the *partial* shade of trees or buildings—and give it a light gravelly or sandy soil, and it will soon repay one for the trouble of planting. The finest garden specimens that we remember to have seen, are two we saw last month, standing on the grounds near the President's house, Washington. They were pictures of beauty in their rich green and coral dress, that would cheat any winter landscape of its dreariness.

Improved Sweet Corn.—We find the following in the *Working Farmer*, from the pen of Professor Mapes—who not only writes good editorials, but cultivates, as we hear, on his farm near Newark, some rather remarkable crops—such as are, for product per acre, not often seen in that state. The Stowell Sweet Corn will, we should think, be much sought after.

"Stowell's Sweet Corn.—This is a new sort, and is every way superior to any other we have seen, for after being pulled from the ground the stalks may be placed in a dry cool place, free from moisture, frost, or violent currents of air, (to prevent drying) and the grains will remain full and milky for many months. Or, the ears may be pulled in August, and by tying a string loosely around the small end, to prevent the husks from drying away from the ears, they may be laid on shelves and kept moist and suitable for boiling, for a year or more. This corn is a hybrid, between the Menomony soft corn and the northern Sugar corn, and was first grown by Mr. Nathan Stowell of Burlington, New Jersey. We purchased from Mr. S. a number of ears dried for seed, and he presented us with a few ears surrounded by the husks, grown the previous summer, the inner leaves of the husks of which, and the corn and cob, were in as green a state as when pulled the previous August. Near the close of the late fair of the American Institute, I presented the managers with two ears pulled in August, 1849, and twelve ears pulled in August, 1850. They were boiled and served up together, and appeared to be alike, and equal to corn fresh from the garden.

"The ears are larger than the usual sweet corn, and contain twelve rows. To save the seed, it is necessary to place them in strong currents of air, freed from most of the husks, and assisted slightly by fire-heat when nearly dry. In damp places this corn soon moulds and becomes worthless. The seed, when dry, is but little thicker than writing paper, but is a sure grower. The stalks are very sweet and valuable as fodder. The seed may be procured from Mr. Stowell, or from ourself."

Making Fish Ponds.—Professor Bryan, of Philadelphia, publishes in the *Plow, Loom and Anvil*, an interesting article on the construction and value of fish ponds—especially in the interior of the country. He gives an account of an artificial pond, between 200 and 300 feet square, on the farm of Gideon Lee, Esq., near Seneca Lake, N. Y., which was made by damming up a sloping surface backed by marshy ground. The supply of water is abundant—so that the overflow moves a grist mill. Some seventeen trout were put into this pond seven years ago. Since that time, two thousand large and fine fish have been taken from the pond, and the table of the family is at all times well supplied. Mr. Delafield, in the same neighborhood, has an artificial pond made by an embankment in the same way. It is stocked with fish, and not only supples his table, but allows fish once a week for his farm laborers. These ponds are also useful in affording a supply of ice to fill the ice house-every winter.

In England the *carp* is the favorite pond-fish, growing to a large size and becoming fat very readily. It is a good fish, especially adapted for ponds, and has been naturalized in several places in this country.

For trout, unless the surface of the water is

very large—or, as in Mr. LEE's above referred to, has shallow places filled with tall grass into which the young trout swim, the old fish will often devour the young ones to such an extent as to prevent their increasing rapidly. To prevent this, it is best to make a small pond, connected with the large one by a shallow strait—only three or four inches deep. Into this small pond the little trout will escape when pursued, till they are large enough to command the respect of the seniors.

Useful ponds of this kind may often be made by merely forming a dam or embankment in any favorable spot well supplied with water.

Many persons have a fancy for making ponds as *ornamental* features in country places. This should never be done, unless it is first ascertained that there is not only an abundance of water to keep the pond full in the dryest seasons, but also to preserve it clear and fresh. A large pond, covered with weeds and half stagnant, may be useful—but it is far from ornamental. Nothing but a constant *overflow*—made by a stream running continually into and out of a pond, will keep it so clear and bright as to be really ornamental.

DELIGHTFUL WINTER LANDSCAPE.—I saw, not long since, a country house where there was a novel feature that delighted me. This was a winter landscape, or scene, on one side of the house, upon which the two rooms occupied by the family in winter looked. A broad glade of lawn was agreeably varied and quite surrounded, by beautiful evergreen trees and shrubs. From the windows commanding this scene, not a leafless tree was in sight, nor any other feature which reminded you that the leaves had fallen. The grass still green, and the white pines, spruces, firs, hemlocks, junipers, laurels, etc., from large trees to small shrubs, were all arrayed in the richest green—so as fairly to belie the season. Even when the lawn is covered with snow the evergreens are still cheerful, and their verdure is heightened by contrast. I have seldom seen a happier idea, or one better carried out. It seems to me particularly well suited to country houses in which the family passes the whole year. Yours, S.

[An excellent arrangement, and one which may be heightened in the execution. With the American Holly and the Winter-berry to decorate it by their brilliant berries, and such plants as the Yucca and Chinese Honeysuckle (which hold their foliage all winter,) to give it variety, a winter garden might be a gay and agreeable thing to look upon when January is at its bleakest. ED.]

REFORM IN PHYSICAL EDUCATION.—We have read with great pleasure, an article in the Ohio Cultivator, from the pen of Mrs. BATEHAM, which is so much to the point, that we must find a place for it. Mrs. BATEHAM's remarks are so truly sensible and so admirably expressed, that they must, we think, touch bottom in the west. When feminine writers, in farming papers, begin to speak to the purpose in this way, we may begin to hope that the millenium of a *healthy race* may one day dawn upon the country.

"We may not agree with all of our readers upon the mooted questions of "women's rights," or the propriety of calling conventions to aid in securing the rights and privileges that many of them demand; but one thing is sure: we can none of us remain *indifferent* while every newspaper and periodical is more or less occupied in discussing the subject, and the public mind is so much interested that even the odious "fugitive slave law" can only crowd it a little into the back ground. No, we cannot be indifferent; and few of us will deny that there are great social evils to be removed, or assert that woman now occupies in all her relations, the position that she should. There is need of reform, and of one branch of this reform we wish now to speak, to wit, reform in the *physical education* of women.

"Truly it is folly for any one to think of having women educated so as to become ornaments to the bench, bar or desk, or expect them to become conversant with political intrigues and manœuvres, and qualified to choose their rulers, or become such themselves, so long as their physical constitutions are so frail and delicate that a little unusual exertion, either physical or mental, is sufficient to prostrate them. Indeed, they are not qualified to discharge their present duties aright, much less to add new and untried ones. With their feeble bodies and diseased nerves, and the host of other maladies that follow in their train, they are unfit for the responsibilities of mothers, housewives, or members of community. Their time is occupied, and their attention engrossed, by their own sufferings, their own wants, and their own petty interests, and they have neither time nor sympathy to spare for others; and it is vain to expect in them a philanthropic heart, anxious to ascertain the necessities of the poor and the wants of society, or to expect them to manifest the strength and skill—the energy and decision of character which would enable them to apply the remedy. And all this necessarily

follows from their impaired health and feeble constitutions.

"*There should and must be a change.* We know that health of body is not a panacea; it alone will not remove the evils of society, and place all in their proper positions; but without it, and until there is a change wrought here, we cannot hope to see the females of our country become the earnest, sensible, well-informed women that they must be to meet the great and increasing demands of their age and country.

"We are aware that these evils are far more prevalent among females in towns and cities, than those who live in the country, yet they are fast becoming fearfully prevalent here. The daughters of our more wealthy *farmers*, especially, are inclined to imitate too closely the habits of the city ladies. They are much too fearful lest their hands should be soiled, or their faces browned by labor and exposure; and they are too careful to prevent the pure air and healthful sunlight from entering their apartments. The casements must have no crevices; air-tight stoves must be introduced to keep the vitiated air at a high temperature, (too often even in sleeping rooms,) and the windows must be darkened by blinds and abundant drapery, both to protect the carpets and insure pale and delicate countenances to the daughters.

"Now this is all wrong. We do not wish you to become masculine in looks or manners, nor to aid your brothers in their laborious occupations, but we do earnestly desire that you should draw back the curtains, ventilate your rooms thoroughly, engage actively in household labor, avoid injurious habits of dress and of diet, pay strict attention to personal cleanliness, and above all, *take abundant exercise in the open air.* We wish you to consult your own constitutions, and instead of making their natural delicacy an excuse for perpetrating any amount of injury upon them, we wish you to develop and strengthen, without overtasking and injuring them. In a word, we wish you to cultivate and possess healthful and vigorous physical constitutions.

"Woman cannot be elevated until her mind is vigorous and active. With an intellect enfeebled and dull, inactive and indolent, she is fit for no more elevated station than a parlor doll or a kitchen drudge. She must be awake and in earnest: but the mind is, to a great extent, dependent upon the body. If the latter is diseased and enfeebled, the former must be weak; but give tone and energy to the physical system, and mental vigor will generally be proportionate."

PRUING FRUIT TREES.—From observation and experience I have learned some *facts* relative to trimming trees, which may be useful to others; and I know of no medium of communication so suitable as your excellent work.

The question is repeatedly asked, "When is the *right time* to trim fruit trees?" But I have never heard the more important question asked, How is the *right way* to trim trees?

The answers to these two questions, which I propose, is the following *rule for trimming trees.* Between the 20th of June and 4th of July, cut the limb very close to the trunk, so as not to separate the bark from the wood; then with a brush, cover the wood and bark with gum shellac, having it previously dissolved in alcohol.

Why this particular time? some will ask. I answer, because this is the season when the year's growth of wood is soft, [when the deposit of young wood is going on,] and it will unite with the bark quite out to where it is cut off, a very important point. Why cover over the space with gum shellac? another will ask. Simply because this will preserve the wood from decaying, while Nature is at work healing the wound.

I burn apple tree wood in a Franklin stove, because it never snaps on the carpet,—and I have no difficulty in purchasing it. Farmers are "cutting down old apple trees which formerly bore superior fruit, because they are dying." And *why* are they dying? Simply because they nave been *improperly trimmed.* In cutting up the trees, the outside has generally a sound appearance, but inside I find large limbs have been cut off, and before the wounds healed over, that part of the limb not removed had become *rotten*, and thereby so materially affected the health of the tree, that it could bear no more fruit—it could hardly live—it must be cut down to make room for young trees, which, if treated in the same manner, will prematurely decay from the same cause.

Trees should be trimmed when young, in such a manner that there will be no necessity for cutting off *large* limbs. If this were done our fruit trees would attain a good old age, instead of being cut down when they should be in the prime of life and in full bearing. A SUBCRIBER. *Trenton, N. J., Nov.* 26, 1850.

Answers to Correspondents.

NAKED PLACE.—*W. S.* (New Haven.) We notice your plan, and the want of trees about your house. You had better expend $50 in planting ten Elm trees of good size—say with trunks five or six inches in diameter—

grouping them on your lawn about your house, than in making the shrubbery walks you speak of. The large trees, (moved in winter with balls,) will give you shade and foliage immediately—and next year, if you cannot afford to do both now—you may plant your shrubbery, and complete the minor details.

Village Church.—*B.* It would have been easy to design a simple gothic church, to be built of stone, and to accommodate the same number, for the same sum that the committee have determined to expend upon the building they have erected. We have sent you the sketch, and you can determine which would look most like a church. The whole cost would be about $6,500.

Hedges.—*A German Subscriber,* (Bucks Co. Pa.) The hardiest and best hedge in this climate, for farmers, is the Buckthorn. You can get the young plants for $5 to $6 per 1000, at the nurseries, or you may buy the seeds, and sow them as you would peas, and after they have grown one year in the rows, transplant them into a hedge. To plant the hedge, clean the ground of all rubbish, plow the space three feet wide, and deeply, (running the plow twice in the same furrow,) and give it a dressing of manure from the barn-yard. The plants should be set in a double row, six inches apart—not opposite to each other, but alternate.

Trenching.—*A Constant Reader,* (Portland.) The difficulty you complain of in your garden, arises from want of drainage. You must contrive to run one deep drain through it, at least, so as to prevent the water standing in winter and spring. After doing that, trenching it will work wonders, but not without drainage. The brine-ashes you speak of, will be the best possible manure for it, and you may use them at the rate of 300 bushels to the acre, with great advantage.

Trees for Poor Soil.—*Arbor.* We know of nothing that will do so well on your dry, gravelly hills, as the European Larch and the Norway Spruce. If you want a great number, you had better import plants a foot or eighteen inches high, from the English nurseries. They may be had for a few dollars per 1,000.

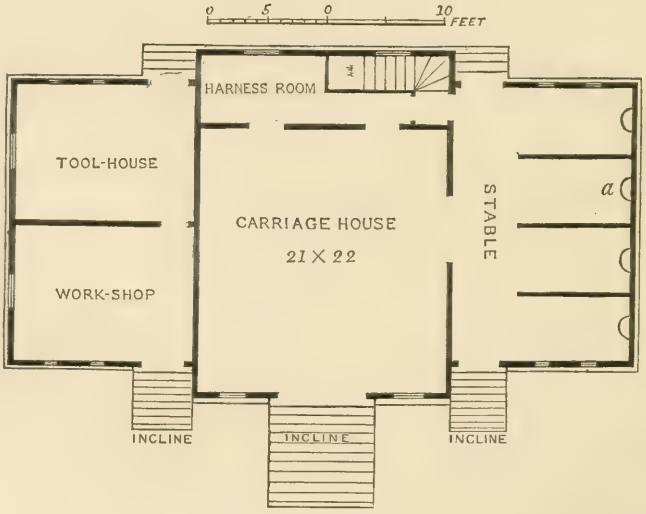
Green-houses.—*A. R.*, (Richmond.) You have injured your plants by watering them with liquid manure when in a half dormant state. If they had been growing freely at the time, it would have benefitted them.—*A Lady,* (Brooklyn, N. Y.) The temperature of your green-house should not be kept so high at night—but always several degrees lower than in the day time. It is contrary to natural laws to have the nights hotter than the day, even in the tropics, and if your plants are forced to grow most at night, the stems will be feeble and sickly.—*B. Jones.* Your green-house,we should think, needs more air. If you can contrive to introduce it *warm*, then you can ventilate the house in all weathers which will benefit the plants amazingly. Cannot you form a little air chamber over the hottest part of the flue—either of bricks or sheet iron, and introduce cold air, by a tin tube, through the outside wall. This air-chamber will then pour in a stream of warm air whenever there is a fire in the furnace, and when there is none, you can shut the cold off by a lid or valve. When the weather is very cold, so that large fires are necessary, you should occasionally sprinkle the the flues with hot water in the mornings.—*M. L. P.*, (Jefferson Co., N. Y.) You may save one-half the fuel consumed by having light shutters to cover your glass at night. The extremes of cold will also be prevented, greatly to the benefit of the plants.

Evergreen Seeds.—*F. Jones,* (Clarke Co., Ky.) Seeds of the Deodar and Araucaria cannot we think, be procured in this country. It is possible that by addressing Messrs. Whitley and Osborne, Fulham, near London, they may be obtained.

Grafting Seedling Pear Stocks.—*A. Birdsey,* (Middletown.) It will make no difference as to the liability to blight at what age you graft the seedlings. When they are half an inch in diameter they are large enough, and they may be budded with success when only two years old. Double grafting is not at all necessary for your purpose. The most profitable winter pear is the Pound, and the most profitable summer pear the Bartlett.

Books.—*A. N.* (Louisville, Ky.) Gray's Botany of the Northern States. You will also find Eaton's Manual of Botany a useful handbook.—*Walter,* (Buffalo.) The volume you want is Repton's Landscape Gardening. Buist's American Flower Garden Directory will give you the culture of all the most popular exotics.

Design for Carriage House and Stable.



Hort: Feb., 1851.

THE

Horticulturist,

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

The Beautiful in a Tree.

IN WHAT does the beauty of a tree consist? We mean, of course, what may strictly be called an ornamental tree—not a tree planted for its fruit in the orchard, or growing for timber in the forest, but standing alone in the lawn or meadow—growing in groups in the pleasure-ground, over-arching the road-side, or bordering some stately avenue.

Is it not, first of all, that such a tree, standing where it can grow untouched, and develop itself on all sides, is one of the finest pictures of symmetry and proportion that the eye can any where meet with? The tree may be young, or it may be old, but if left to nature, it is sure to grow into some form that courts the eye and satisfies it. It may branch out boldly and grandly, like the Oak; its top may be broad and stately, like the Chestnut, or drooping and elegant, like the Elm, or delicate and airy, like the Birch, but it is sure to grow into the type-form—either beautiful or picturesque—that nature stamped upon its species, and which is the highest beauty that such tree can possess. It is true, that nature plants some trees, like the fir and pine, in the fissures of the rock, and on the edge of the precipice; that she twists their boughs and gnarls their stems, by storms and tempests—thereby adding to their *picturesque* power in sublime and grand scenery; but as a general truth, it may be clearly stated that the *Beautiful*, in a tree of any kind, is never so fully developed as when, in a genial soil and climate, it stands quite alone, stretching its boughs upward freely to the sky, and outward to the breeze, and even downward towards the earth—almost touching it with their graceful sweep, till only a glimpse of the fine trunk is had at its spreading base, and the whole top is one great globe of floating, waving, drooping or sturdy luxuriance, giving one as perfect an idea of symmetry and proportion, as can be found short of the Grecian Apollo itself.

We have taken the pains to present this *beau-ideal* of a fine ornamental tree to our

readers, in order to contrast it with another picture, *not* from nature—but by the hands of quite another master.

This master is the man whose passion is to *prune trees*. To his mind, there is nothing comparable to the satisfaction of trimming a tree. A tree in a state of nature is a no more respectable object than an untamed savage. It is running to waste with leaves and branches, and has none of the look of civilization about it. Only let him use his saw for a short time, upon any young specimen just growing into adolescence, and throwing out its delicate branches like a fine fall of drapery, to conceal its naked trunk, and you shall see how he will *improve* its appearance. Yes, he will trim up those branches till there is a tall, naked stem, higher than his head. That shows that the tree has been taken care of—has been trimmed—*ergo*, trained and educated into a look of respectability. This is his great point—the fundamental law of sylvan beauty in his mind— *a bare pole with a top of foliage at the end of it*. If he cannot do this, he may content himself with thinning out the branches to let in the light, or clipping them at the ends to send the head upwards, or cutting out the leader to make it spread laterally. But though the trees formed by these latter modes of pruning, are well enough, they never reach that exalted standard, which has for its type, a pole as bare as a ship's mast, with only a flying studding-sail of green boughs at the end of it.*

We suppose this very common pleasure—for it must be a pleasure—which so many persons find in trimming up ornamental trees, is based on a feeling that trees, growing quite in the natural way, must be capable of some amelioration by art; and as pruning is usually acknowledged to be useful in developing certain points in a fruit tree, a like good purpose will be reached by the use of the knife upon an ornamental tree. But the comparison does not hold good—since the objects aimed at are essentially different. Pruning—at least all useful pruning—as applied to fruit trees, is applied for the purpose of adding to, diminishing, or otherwise regulating the *fruitfulness* of the tree; and this, in many cases, is effected at the acknowledged diminution of the growth, luxuriance and beauty of the tree—so far as spread of branches and prodigality of foliage go. But even here, the pruner who prunes only for the sake of using the knife, (like heartless young surgeons in hospitals,) not unfrequently goes too far, injures the perfect maturity of the crop, and hastens the decline of the tree, by depriving it of the fair proportions which nature has established between the leaf and the fruit.

But for the most part, we imagine that the practice we complain of, is a want of perception of what is truly beautiful in an ornamental tree. It seems to us indisputable, that no one who has any perception of the beautiful in nature, could ever doubt for a moment, that a fine single elm or oak, such as we may find in the valley of the Connecticut or the Genesee, which has never been touched by the knife, is the most perfect standard of sylvan grace, symmetry, dignity, and finely balanced proportions, that it is possible to conceive. One would no more wish to touch it with saw or axe,

* Some of our readers may not be aware that to cut off the side branches on a young trunk, actually lessens the growth in diameter of that trunk at once.

(unless to remove some branch that has fallen into decay,) than to give a nicer curve to the rainbow, or add freshness to the dew-drop. If any of our readers, who still stand by the pruning knife, will only give themselves up to the study of such trees as these—trees that have the most completely developed forms that nature stamps upon the species, they are certain to arrive at the same conclusions. For the beautiful in nature, though not alike visible to every man, never fails to dawn, sooner or later, upon all who seek her in the right spirit.

And in art too—no great master of landscape, no CLAUDE, or POUSSIN, or TURNER, paints mutilated trees; but trees of grand and majestic heads, full of health and majesty, or grandly stamped with the wild irregularity of nature in her sterner types. The few Dutch or French artists who are the exceptions to this, and have copied those emblems of pruned deformity—the pollard trees that figure in the landscapes of the Low Countries—have given local truthfulness to their landscapes, at the expense of everything like sylvan loveliness. A pollard willow should be the very type and model of beauty in the eye of the champion of the pruning saw. Its finest parallels in the art of mending nature's proportions for the sake of beauty, are in the flattened heads of a certain tribe of Indians, and the deformed feet of Chinese women. What nature has especially shaped for a delight to the eye, and a fine suggestion to the spiritual sense, as a beautiful tree, or the human form divine, man should not lightly undertake to remodel or clip of its fair proportions.

Horticultural Exhibitions.

THEIR INFLUENCE UPON CULTIVATION AND TASTE.*

IF the question was put to us—what, within the last seven years has contributed the most to the promotion of first-class cultivation among gardeners?—we could have no hesitation in answering, the public exhibitions of plants; for, though there may be many who may profess not to have been so influenced, there can be no question that the first great cause of improvements has been the noble examples of skill periodically brought together under the auspices of these Societies; which examples, being to a very great extent particularly described, and sometimes pictorially represented by means of engravings, have, through the medium of the horticultural press, been sent through the length and breadth of the land,—thus penetrating and eradicating prejudices in the craniums of some of our would-be wise countrymen, which could not have been eradicated by other means. Again the employers of gardeners have witnessed what could be accomplished by proper management; and hence, where the means were allowed, the gardener had nothing but his own want of skill to blame, if he did not accomplish that which others had done before him. Apart, however, from the influence of these *fetes* upon cultivation, there can be no doubt they have effected much good in guiding the artist, and in improving and correcting the taste of the middle and higher classes of society, and of this we need no stronger proof than the fact that manufacturers look to nature and not to art, for patterns to beautify the varied productions of the silk loom, &c.; while artists in wax and artificial flowers imi-

* From the London Gardeners' Magazine of Botany.

tate nature so closely, as to render it difficult, in some specimens which we have recently seen, to tell whether they were real or not.

Our object, however, in this paper, is not so much to point out the benefits accruing from these exhibitions, as to call the attention of the managers of the exhibitions themselves, to the necessity of infusing a little more artistic effect into the arrangements of the exhibition tents, for we feel convinced there is yet much room for improvement. The best exemplification of artistic arrangement was seen at the exhibitions of American plants in

the Regent's Park Garden, where, by diversifying the surface of the ground, and grouping the plants with considerable taste, a very effective *tout ensemble* was produced.

Seeing, then, that improvements are to be made, and with the fact before us that this artistic arrangement of plants in plant-houses, is a matter of considerable interest among persons of taste at the present time, we venture to recommend two stands for the exhibition of Orchids, from the design of H. Noel Humphreys, Esq.; and we venture further to assert that if these stands were as tastefully filled, as the designs are appropriate, a very pleasing and highly gratifying result would be achieved. The larger stand is supposed to be executed in rustic work, stands four feet in height, to the first tier of plants, and is proportionately large in circumference. The second stand is nearly of the same dimensions, but to render it more artistic, and at the same time durable, it is executed in "*terra cotta*." These stands, tastefully filled and introduced into an Orchid-tent—say the rustic stand in the center, between the tables, and a *terra cotta* stand at each end of

the tent, thus forming a group with a center, and two sides—we are quite sure would be much admired, and would impart an entirely new feature to our exhibitions. Grouped artistically with mixed plants, some remarkable for their flowers, others for their noble foliage, and a third section, as the Ferns, for their graceful habit, a very striking effect might be produced; and, introduced upon the same principle into a conservatory or ball-room, we cannot see that they would be out of place. To keep up the interest of an exhibition tent, it is necessary that the plants should not all be seen on first entering the tent, for though the first effect may be very pleasing, the eye gets restless, and seeks a change long before one can be met with; but if plants of an opposite and striking character were introduced in these or similar stands, we are quite sure the appearance of the tents would be greatly improved, and visitors would not fail to appreciate the improvement.

A FEW NOTES ON THE STRAWBERRY.

BY R. G. PARDEE, PALMYRA, N. Y.

Since a brief article I sent to the Horticulturist for December appeared, I have received numerous letters of interest and inquiry, on the nature and culture of the strawberry, from amateurs, both in this state and New-England; and it has occured to me that some of our unsettled queries on the subject, might be appropriately referred to the public through your columns.

First. What varieties of the strawberry are uniformly reliable in our variations of soil and climate? An important inquiry, truly. Are there any kinds which will prove as reliable as the Rhode Island Greening, or Early Harvest Apple, or White Doyenne Pear, or Crawford's Early Peach, for New-York? That some kinds are vastly more certain of a crop than others, any observer will admit. Among our finest berries, can we not say that Burr's New Pine is as reliable for a crop in all places in our state, as the Rhode Island Greening. But what others have been so generally and widely tested, and proved satisfactory. Some will say the Large Early Scarlet, but our friends from Geneva assure me that my remarks with regard to this variety hold true there; they say "the amount of fruit is small and very transient." I have *a hope* that Black Prince will prove reliable everywhere, but it perhaps, has not yet been sufficiently tested. Hovey's is very fickle in many places. Many other kinds should be tested everywhere, and so tested that their failure shall not be caused by neglect.

Second. Is the flavor of strawberries materially changed by different locations and soils? The testimony of men of taste in different places, seems to indicate this. If not so, why does Mr. Downing pronounce the Black Prince of the highest flavor, while our friends in Rochester pronounce it insipid, or *poor* flavor.* It is quite certain that both parties know well what constitutes superior flavor in the strawberry. It appears quite probable, therefore, that the Black Prince has degenerated from Mr. Downing's garden, or it has been unfavorably affected by soil or climate at the west. In Palmyra we do not call Black Prince, Hovey's, &c., *poor* flavor, still we cannot compare them with the delicious flavor of Burr's New Pine, Swainstone Seedling, &c.

Is it after all necessary, in order to productiveness, to mingle staminate with pistillate plants? It would neither be modest or sensible in me to express a negative to this ques-

* If our correspondent will examine the discussion on Strawberries in the Report of the Pomological Congress at New-York, last year, he will find that this strawberry is *fickle* in flavor. It is always very fine here, and we think generally in stiff soils, but is quite insipid in many light soils. Ed.

tion, when such distinguished cultivators as Downing and Longworth, Thomas and Barry, have stated it otherwise; and yet, after all, some appearances in the recent conduct of Hovey's Seedling puzzles me. If I am not mistaken, Thompson of London and Hogg of New-York, incline to a contrary opinion. It is quite certain that the strawberry is a very fickle plant, and how much allowance must be made for this habit, I cannot determine. I have taken an interest in the strawberry for twelve or fifteen years past, and have often observed Hovey's refuse to bear when surrounded by staminates, while on the other hand, I have certainly, several times, seen them with astonishing crops of fruit, when I could detect no staminates in their vicinity, and was assured by the cultivators there was none. However, all this may be explained by other causes, and the settled theory remain; and yet I am anxious to see still farther and more careful experiments. I have often seen a new bed of strawberries bear largely the first year of fruiting, and obstinately refuse to bear ever afterwards, and vice versa. Sometimes I could account for such sterility by a dry season, but at other times I could find no such apology for the barrenness. "I think it desirable to choose runners from healthy, *productive* plants," says one of our most distinguished amateur florists. "I have not allowed a single or semi-double aster to seed in my garden in *twenty-five years;* as soon as one of that character blossoms, I pull it up." Acting on this plan with the strawberry, I am convinced our best kinds will uniformly yield large crops. At an expense of only one dollar in preparing the bed and keeping it clean, I have supplied my family with one to two quarts per day for more than three weeks, of this most delicious fruit. I have, in my travels, accumulated some twenty-three kinds in my garden, (besides those I have discarded,) with which I am experimenting, and I am to add some six or eight kinds more in the spring, for the same purpose. I cannot convey to your readers how much I am interested and entertained "to see this numerous family of *beauties come out for the first time*, as the court language is," for in the language of a venerable amateur in the strawberry field, whose enthusiastic devotion to it makes him, as you see, quite young again, elegantly says, "The plant is, itself, one of the most beautiful in Nature, beautiful in its foliage—beautiful in its blossom, and, above all, in its fruit. Every variety shows us some new form of beauty." There is a charm in strawberry culture, a delightful uncertainty about the product, until the first season arrives; and to the lover of Nature it opens a wide, and not wholly occupied field, for the study of vegetable physiology. R. G. Pardee.

Palmyra, N. Y., Dec. 1850.

Remarks.—The most popular standard strawberries, at the present moment—for general cultivation—are Large Early S arlet, Hovey's Seedling, and Burr's New Pine.

The majority of cultivators appear to assent to the doctrine of the necessity of having a few staminate sorts like the Early Scarlet, growing near a patch composed wholly of pistillate blossoms, like Hovey's Seedling and Burr's New Pine. But there are still, experienced cultivators, like Mr. Hogg of New-York—who deny the necessity, and hold that pistillate sorts in good soil, and with good culture, will bear the finest crops. Practically, however, one bed of the Large Early Scarlet appears to be sufficient to fertilize a dozen beds of pistillate sorts—so that in actual culture the thing is very simple. We may add, that in England strawberry growers pay no attention to staminate or pistillate flowers—yet the largest and finest strawberries in the world are grown there. They contend that a good strawberry blossom fertilises itself, and becomes sterile only by defects of climate or soil. Ed.

DIANA GRAPE—FRUITS AT THE SOUTH.

BY ROBERT HARWELL, MOBILE.

A. J. Downing, Esq.—The Diana Grape fruited with me this year, and is certainly the best grape I ever tasted. The vine is a strong grower and good bearer, and will suit this climate as well as we could desire. I had Catawba grapes ripe at the same time the Dianas were ripe, and although the Catawba is a most excellent grape, it cannot be compared with the Diana for fine flavor.

In your remarks at the close of an article written by me for the Alabama Planter, you ask me to explain how it is that our native peach trees set their fruits better than the northern kinds, when the natives generally blossom in February, and the northern kinds in April.

I would most gadly comply with your request if I could do so, but I feel altogether unequal to the task. I have thought, however, that all fully acclimated stone fruits, in obedience to an unchanging law of nature, must blossom just as soon as the spring will permit, in order that the fruit may set early, while the weather is cool, and before the general rush of spring sap comes on, which I think tends to throw off the very young fruit. There are, probably, no better bearing fruit trees in the world than our native, or Chickasaw plums, and they almost always blossom here about the last of January or early in February, and set their fruit while the weather is cool; and it is pretty much the same case with our native southern peaches. On the 28th of March, last spring, our northern peaches were killed in the bud, while our native trees had a fine crop of young peaches nearly or quite as large as Partridge eggs, and were but little injured by the cold. Our wild cherries, also, blossom very early, and set their fruit well.

When I first began to cultivate the northern varieties of peaches, I thought their habit of blooming late in the spring would be a decided advantage—but I have found that in this I was mistaken. This habit of late blooming renders them liable to be destroyed by cold weather in the latter part of March, or in April—and if they escape the cold weather, the season is so warm when they blossom, (say from 10th to 20th April,) that the young fruit nearly all falls off the trees, from some cause or other; I suppose it to be owing to the warm weather. I have seen our northern peach trees loaded with young fruit about the size of small bird's eggs, and not a bud to be seen on the trees, and in this condition they would remain for two or more weeks without any perceptible change in the size of the young fruit—when the spring sap began to flow freely and rapidly, the young peaches would be thrown off in a few days. Robert Harwell.

Cottage Hill, Mobile, Dec. 1850.

Mr. Harwell is one of the most intelligent fruit-growers at the south, and we believe the first to test the Diana Grape there. We are glad to hear so favorable an account of it, and one corresponding to our own opinion.

His account of the habit of our northen peach trees at the south, is curious and unexpected, and shows how strong *constitutional* tendencies are. It goes also to prove how necessary it is that native sorts of real excellence should be originated in every considerable section of our widely extended country, to be thoroughly adapted to such localities. Ed.

THE DETROIT RIVER PEAR TREES.

BY L. F. ALLEN, BLACK ROCK, N. Y.

In the summer of 1819, thirty-one years ago, then but a boy, I first saw these remarkable trees, lofty, venerable and flourishing. Being at Detroit last September, I paid many of them a visit in detail, for the purpose of a close examination. Those of your readers who are familiar with the Detroit river, need not be told that previous to the late war with England, and for several years after—perhaps until 1820—its banks on both sides, from Lake Erie to St. Clair, were occupied almost exclusively by the descendants of the original French settlers, many of whom still remain. On their farms near the river, were, and still are, humble looking farm-houses, principally of logs, with but poor and inconvenient out-buildings; a small garden; a straggling orchard of apple, pear, and perhaps a few peach trees, currant bushes, &c., all under the most neglected culture, but even with these drawbacks, yielding bountiful crops of fruit. They were, too, of natural varieties; grafting, if even known, never being practiced among the French *habitans* of that insulated region. Detroit, Sandwich and Malden, were the only towns upon the river, and they small trading and military posts, which were the only markets for the meagre products of the indolent people who farmed, fished and hunted in their neighborhoods. These settlements were commenced about the year 1670—one hundred and eighty years ago—and but fifty years after the Pilgrim landings at Plymouth. To those familiar with the agriculture of the Canadian French, of whom these people were a part, the exhausting and wasteful farming practiced by them needs no description. None can be worse, as the frequent old mounds of barn and chip manure now to be found around the former and present sites of their dwellings, and the worn and desolate appearance of their exhausted fields, too plainly testify.

Taking a horse and buggy at Detroit, I rode for several miles up the river, nearly to the foot of Lake St. Clair. On the out-skirts of the city, these old pear trees are occasionally seen, towering high above the house-tops, among the ancient apple and other trees; but the greater part of them have been rooted out in the opening of streets, and building up of the town. Two or three miles out, where the old French farmers remain undisturbed—and they chiefly so remain, both in their use and occupants—for cultivation they cannot be said to have—these grand old trees begin to show in all their vigor and maturity. Ten, twenty, and in some instances more, may be counted in a field adjoining a dilapidated old farmery near the river; some in rows like avenues, others scattered about in groups, and occasionally struggling for supremacy among an ancient orchard of enormous apple trees. I stopped at several places, went into the grounds and carefully examined the trees. I girted several with a line, and found them to measure six to nine feet in circumference at three feet from the ground. They towered up in many instances, fifty to sixty feet high, with grand, spreading tops, and though some of them had occasionally dead limbs among their branches, and others had lost parts of their tops by the most heedless and barbarous cutting out, leaving large, stumpy, decayed hollow buts, and others broken and torn out by winds or over-bearing, the main trunk and branches looked vigorous and healthy, showing wonderful vitality. The crops of fruit had mostly been picked, yet some trees remained loaded with fine looking pears, very fair and handsome; much resembling the Virgalieu in size and appearance—winter pears, as the people told me. Twenty to thirty bushels is a common crop for the largest trees. There were no signs of grafting in any of them. I tasted some of the fruit; although sweet and juicy, they had the astringent,

choky taste of the wilding, which I have no doubt they are, and are chiefly used for cooking, drying and preserves. Some of them are ripe in August, and but few of them last beyond September; and the great majority of the fruit, as I was told, is about the size of those I saw. The oldest person I could find to learn any thing of their age and history, was an old French woman who was born on the farm where I saw her. She did not know her own age exactly, but I gathered from her talk that she was full seventy years old. She informed me that the trees in her orchard were apparently as large as they now are when she was a child; but by whom, or when they were planted, she could give no account. The seeds unquestionably, were brought from France at the first settlement of the country, and in all probability, the trees must be much more than a century, probably a hundred and fifty years old, and from present appearances they may, with ordinary care, hold on full another hundred years.

I got a spade and dug on several different farms among the trees, and found the soil *invariably a heavy, strong, clayey loam*—some would call it cold and clammy—*highly charged with lime*, and resting on a clay subsoil—an almost dead level, and elevated but a few feet above the river; and although it had been worked ever since, and probably years before the trees were planted, did not appear to be exhausted in its fruit-sustaining properties. This is the predominating soil, both on the Detroit and Niagara rivers, and finer, larger, and more fruitful trees are not to be found, than are produced on the banks of these rivers, particularly in the old settlements; and up and down, as they were seen from the water, on both shores of the Detroit river, the old pear and apple trees had the like appearance. Nor had the land been drained at all, that I could discover, but was just in its natural condition.

Now, whether if these had been *worked* trees of the finer kinds of fruit, they would have lived to this advanced age and great bearing, I am unable to determine. But certain it is, that in hardihood and vigor no fruit trees can excel them. And it is an interesting fact for pomologists to learn, that we have a soil in which the pear will flourish equal to any other tree known—and to those who wish to cultivate this valuable fruit to high perfection, it is worth while to know that in such a soil—a *lime stone, clayey loam*—they will thrive successfully, while in a sandy, primitive soil, they certainly are short-lived, and fruit badly, unless *effectually* fed with *lime* and *ashes*.

An inference or two drawn from the history and position of these ancient trees, may be worth consideration. Is not the *stock* of the *seedling* pear hardier and more vigorous than the *worked* stocks of the more refined and delicate wooded fruits? And if so, is it not the better plan to grow our pears of such seedling stocks up to the branching point, and then work them with the desired varieties? It so appears to me.

I am informed by some intelligent cultivators of fruit, natives of Normandy, that in the heavy soils, particularly about Rouen, the pear grows with a luxuriance rarely seen in America, and the now almost universal practice among our nurserymen, of importing French seedlings in which to work their pears—thus avoiding the early *leaf blight*, so prevalent among their own seedlings—would seem almost conclusive proof that there is a soil which is almost exclusively adapted to the successful culture of this tree beyond any other.

Look at the magnificent Virgalieus, or White Doyennes, which grow in such luxuriance and profusion at Canandaigua, Geneva, and all about the interior lake region of western New-York. The soils on which these pears grow, is almost uniformly a heavy clay loam, on a stiff clay sub-soil, highly charged with lime and potash. There is no canker, crack, nor spot about them; while in some other localities, light, sandy loams, in the same coun-

try, they do crack, and shrivel, and spot. The evidence seems to me to be conclusive, particularly with this variety.

There are instances, undoubtedly, where large, flourishing and aged pear trees are found in light soils; but on examination it will be ascertained that such trees are favorably located to receive the wash of the house, out-buildings, or yards, which are rich in lime and potash, thus feeding them highly on the material so necessary to their full development and bearing. And the fact that the plum is so successfully grown in the stiff clays of Schenectady, Albany and Hudson, and other portions of the Hudson river valley where the peculiar "Albany clay" predominates, over other *apparently* more congenial localities, is an evidence that soil, more than cultivation, has to do with the success of many of our better fruits.

May not the history of the Detroit Pear trees also throw some light on the doctrine of *special manures* as a *panacea* for barrenness and want of growth, in many of our fruit trees, standing on light, loamy and sandy soils? For here is the living fact, of trees, in all probability one hundred and fifty years old, of enormous growth, and in full vigor, annually loaded with large, fair, perfect fruit, standing out in open fields—and so long as the trees have stood there—under an exhausting, wasteful course of tillage, with little or no artificial manures of any kind. What an enormous draft of the constituents of the wood, leaf, and fruit of the pear, has been made on that soil; and still, to all appearance, not lacking in the requisite aliment to sustain them for many years to come! A most interesting subject of examination this, to the physiologist. That many of these old trees might now be benefitted by a thorough incorporation into the soil of wood ashes, decayed leaves, rotten wood, spent tan-bark, lime, and barn-yard manure, I have no doubt; for beyond all question, some individual spots where they grow, judging from the waning appearance of the trees, must be well nigh exhausted of their fruit-growing elements. I once knew an old apple tree—perhaps it had stood a century or more—the last survivor of an orchard, its branches mostly gone, its trunk decayed and hollow, brought into a vigorous new growth and bearing, by the application of chip manure and leached ashes, upon the surface beneath it. I knew an old pear tree which stood in a deserted garden, beside a stone wall, and with but a small part of its trunk left, (the rest had rotted off and fallen away,) yet by renewed cultivation, replaced with a new top and branches, which became fruitful, and made a rapid growth of new bark and wood on the decayed trunk. They were on moist, sandy-loam soils.

If I lived in the neighborhood of Detroit, I certainly—if I could get the privilege—would try the virtues of decayed wood, lime and ashes, on one or more of those declining pear trees, and know the result; and it is greatly to be wished, that while they still survive, some one in their immediate neighborhood may feel sufficient interest in the subject to make the proper application, and let the public know the result. LEWIS F. ALLEN.

Black Rock, December, 1850.

HOW TO RENOVATE AN OLD GARDEN.

BY JOHN QUINN, TROY, N. Y.

As this question, "how am I to renovate my old garden?" is invariably put by a numerous class of your readers—who perhaps cannot afford to employ a professional gardener, and are therefore obliged to look to the "Horticulturist" for information on all gardening matters—the following remarks are respectfully submited for their perusal. The remedy I am about to propose is not a new one, for as I consider the radical cure the best

for all kinds of disease, I at once prescribe *trenching*. As the class of readers to which I allude may not be acquainted with the *modus operandi*, I will proceed to lay my method before them—which from long experience, I have known to be effectual.

We will suppose a square of ground in the garden, bounded by walks east, west, north and south, and we will commence at the west side and trench towards the east. The first thing to be done, is to open a trench two and and a half feet wide, and two feet deep, on the west side, running from north to south—throw the earth from this trench in a pile along the west side of it—the practice of many in wheeling this opening over to the east side, where they are to finish, I always considered nearly one-third of the whole labor. As soon as the first trench is shoveled out clean, to the depth of two feet, (I vary the depth according to the nature of the subsoil, i. e., if good sandy loam I go deeper, if very gravelly, not so deep, say eighteen or twenty inches,) I commence by placing a layer of dung along the bottom of the trench—at the rate of *one* large barrow load to every fifteen feet of the trench. I then mark with a line, another trench at the east side of this, two and a half feet wide also, and having one of "Ames' spades," No. 2, I proceed to dig the top of this trench and throw it on the dung which is placed on the bottom of the first; in digging, I put the spade down its full length, and proceed until I have the entire surface soil of the second trench on the bottom of the first. There will be a quantity of loose earth after this spading—before I shovel this in, I spread another coat of manure on top of the earth I have just thrown in, and then shovel the loose earth on top of it. I now commence to dig the bottom of the second trench, throwing it also on to the first, and shovel out the loose earth that falls from my spade, leaving the bottom of the trench level and clean. I have now the first trench finished, and proceed on toward the east the same way—lining off every trench until I come within four of the end; I then commence making each of my trenches about five inches narrower than the preceding one—the object of this is to bring it gradually to a close—the last trench being about fifteen inches wide. Having placed the manure at the bottom of the last trench, as before directed, I now commence leveling back, and bringing the whole piece to a grade. In this process let the spade down as deep as possible, in order to mix the old soil and the new, thoroughly—I keep it well from me, remembering that I have a pile of earth at the west side, that has got to be worked in. The chief advantage that I claim for this method, (which has no claim to orinality,) is the chance it gives me of having a good opening where I finish, of giving the soil a thorough mixing—another is, I can spade the whole piece over in half the time it would take me to wheel the opening surplus over to the east side. I would here suggest, if the sub-soil is not too hard, it would be the most perfect mode, to spade the first coat of manure into the bottom of the trench, which would loosen the soil eight or ten inches more. I trenched an asparagus bed in this style for Messrs. PARSONS', of Flushing, six years ago—here I could not practice it, the subsoil being too hard.

After the piece is leveled, I put on a good top-dressing of manure; and the best crops to plant the first year would be potatoes, cabbage or cauliflower, anything in fact, that requires a good deal of hoeing. October and November is the best time to trench—you have more leisure then; the ground is more easily worked; you can put all your melon vines, carrot, parsnep, turnep, and beet tops, leaves, &c., in the bottom of your trenches. As soon as the frost is out of the ground in the spring, is the next best time. Ground that has been trenched, will, in eight or ten years, become black by the annual application of manure—trench this over again and it will improve it. It is a great mistake for any one to suppose he can renovate an old garden, by piling on it annually, a quantity of barn-yard manure—if he will not trench, he must try a rotation of manures, say lime one

year, guano another, or better still, a good coat of yellow loam from an old pasture. Trenching is the radical cure, as it creates a deep soil. Old mother earth will assuredly turn up her nose at being drugged with one kind of manure all the time, as she invariably does, at producing the same crop for a succession of years, on the same space. A rotation of manures, and a rotation of crops, are in my opinion, governed by the same laws. Occasionally I see a correspondent in your Journal who has got sick of using stable manure, resort to Guano, bone-dust, spent tan, &c., and finding beneficial results arise therefrom, immediately sings the praises of guano, spent tan, &c., and their superiority over stable manure—so overjoyed is he, that he thinks he has discovered the philosopher's stone. My opinion is, that his success proceeds more from having employed a new agent, than to any intrinsic virtues that either the guano or tan-bark possess over stable manure, which if followed up for any length of time, would soon demonstrate the necessity of a change. I therefore look upon a deep, well trenched soil, as the great ameliorator. A rotation of crops, and a rotation of manures, and mulching, I advocate as much as trenching; and tan-bark is the very best material for the latter purpose, which is all it is good for. I should be very hard pushed when I should mix it with the soil, notwithstanding that Mr. Cleveland's grape vine found their way into it. They were attracted there by the moisture which the tan holds; the roots were evidently near the surface, and a pile of sawdust, or leaves, or any non-conductor of heat, would produce the same results. I fear I have trespassed too long on your valuable space—but as Irishmen sometimes have a roundabout method of conveying their ideas, I lay claim to every indulgence that is extended to them on that head. I am sir, yours respectfully, John Quinn.

Ida Farm, Troy, December 17, 1850.

TREES AND PLEASURE GROUNDS OF PENNSYLVANIA.

BY A MASSACHUSETTS SUBSCRIBER.

"The oak now stately grown, beneath whose boughs
Have childrens' children played, his care had reared;
And a deep grove he sees that when a youth
Was but a thicket, now with him grown old."

The grounds which I described in a former number of the Horticulturist, were not only planted by the hand of taste, but had been kept with care; to the one of which I shall now speak, time had added new beauty in its stately trees, but his destroying finger was visible in all else. As we approached the former residence of Humphrey Marshall, (near the village of Marshallton,) the massive foliage of a variety of trees rising above a dilapidated fence, gave us a foretaste of what awaited us. We were directed to an old gate as the nearest entrance, but found, when it was with difficulty opened, that a huge Tecoma, or trumpet creeper, and Aristolochias twining their cordage like branches from tree to tree, barred the passage—the gentlemen of the party effected an entrance for us through the luxuriant vines, and we stood in what was once the pride and delight of one of the earliest arboriculturists. Marshall was first cousin to John Bartram, and from him he probably derived much of his knowledge of plants, for in 1773 he followed his cousin's example, and commenced this botanic garden, where he gathered together the most interesting trees, shrubs, and herbaceous plants of our country, with many curious exotics.

In 1785, he published an account of our native trees and shrubs, entitled *Arbustum Americanum*, the first work of the kind printed in this country. It received little attention here, as it was half a century in advance of the age—it was, however, quickly appre-

ciated abroad, and translated into most of the languages of modern Europe. He was in correspondence with many eminent men, and sent large quantities of American seeds and plants to England. When the infirmities of age and a cataract had rendered him nearly blind, he could still recognise his favorite trees and walks, and delighted to welcome his friends in the garden he had planted.

Many of the trees have now, at the end of 77 years, attained a large size; the sovereign of the place is a *Magnolia accuminata*, which lifts up its "leafy crown" to the height of *one hundred feet*, in form perfectly symmetrical, giving out branches from its stout trunk at regular intervals; it must be a glorious sight to see it in the spring, covered with its large, white [pale buff, Ed.] blossoms. Near by flourishes the *Gymnocladus canadensis*, or Kentucky coffee, whose broad green pods and divided leaves have a grotesque and foreign appearance. This tree would probably thrive well in New-England, as it grows in Canada. There were also fine specimens of the *Carya olivæformis*, or peecan tree, the Illinois hickory as it is sometimes called; this tree fruits sparingly in the climate of Pennsylvania, yet it grows well, and is an ornamental tree.

I noticed nearly the same variety of oaks as in BARTRAM's garden, especially one of the Quercus heterophylla of a remarkably fine shape. This variety of oak I have never seen growing in Massachusetts, but it is worthy of a place in every pleasure ground, as its foliage has all the beauty of the willow, while the tree has the distinguishing characteristics of the oak. A few herbaceous plants still send up some pale flowers from amid the rank grass, which has overgrown both borders and walks. Some of the hardy and vigorous sorts have eradicated the native claimant of the soil, and grow luxuriantly,—as the *Vinca* or Periwinkle, whose brilliant dark leaves formed a bed many yards square.

After examining the trees for some time, the grand nephew of HUMPHREY MARSHALL, who inherited the place, invited us into the house built by the botanist, where we were shown the telescope sent him by D. FOTHERGILL, of London, whose name is engraved upon it; he pointed out also, the place in the closet where MARSHALL concealed it by a false back, during the time that the British army were in the neighborhood, for MARSHALL added to his love of the flowers of earth, a taste for studying the stars, those unfading flowers of heaven's garden, as a German writer has quaintly called them. We noticed the little observatory which he built in one corner of the house, where it was his delight to watch the motions of the heavenly bodies. It was with regret that I looked again upon the tangled wilderness, "where once a garden smiled, and now where many a garden flower grows wild," and walked towards the burial place of BRADFORD meeting, in which the remains of MARSHALL were interred nearly fifty years ago. We crossed a stile shaded by magnificent oaks, which must have been spared from the primeval forests. They formed a pretty group near the old fashioned meeting-house, their gnarled and picturesque appearance presenting a strong contrast to the usually plain and exposed state of the Friends' houses of worship. The grave-yard was a wide field, unvaried by shrub or stone, the undulating hillocks only marking the "furrows where human harvests grow." This neglect of the Friends to ornament the last resting places of their kindred, appears strange to one of a different faith, since there seems to be an innate desire in the breast of every human being, that some memorial should recall his name to survivors. Trees and shrubs at least, might relieve the monotony of these cheerless fields, for in such monuments there can be no ostentation; the poorest laborer can plant a seed, or set a tree. We were shown as nearly as possible, the place where MARSHALL's grave is supposed to be, but tradition rarely speaks with certainty at the end of half a century. I sought for some memento of the spot to take to my distant home; the only blossom I

could find in the rank grass, was a pale white *Spiranthes*, which I carried away from this desolate habitation of the dead.

It is pleasant to trace out how much the taste of one person influences and improves that of a whole neighborhood. JOHN BARTRAM, by his love of collecting and planting rare and curious trees, inspirited his cousin to follow in his footsteps. MARSHALL embellished his paternal farm in Marlborough, the township where PIERCE'S Arboretum now flourishes. And the Woodlands, a visit to which I shall next describe, are in close proximity to BARTRAM'S garden, whose owner was a constant friend and assistant of HAMILTON. Thus, "like circles widening round upon a clear blue river," may the efforts of a single person produce a salutary effect upon many generations. To all the readers of the Horticulturist, I would re-echo the words of old GERARD: "Forward in the name of God, graft, set, plant, and nourish up trees in every corner of your ground; the labor is small, the cost is nothing, the commodity is great; yourselves have plenty, the poor shall have somewhat in time of want to relieve their necessity, and God shall reward your good mind and diligence." Yours, B.

Cambridge, Mass., Dec. 1850.

NOTES ON SOUTHERN HORTICULTURE.

BY ROBERT HARWELL, MOBILE.

FRUIT-BEARING AGE OF FRUIT TREES.—The puberty, or fruit-bearing age of fruit trees, varies according to variety, climate and cultivation. Peach trees very often bear some fruit the second year from the seed, provided they are well cultivated and well cared for in all respects, and on the third year a good crop may be expected. Apple trees will begin to bear fruit nearly as soon in this climate as the peach. There will not be more than one or two years difference, (I mean grafted or budded apple trees.) The apple, however, is much longer than the peach in developing its fruit-bearing powers fully, and, unlike the peach, it does not bear its fruit generally on the wood of the previous year's growth, but on spurs coming out from the limbs, of two or three years growth or more. Some varieties, however, bear some fruit on the wood of the previous year, generally from the terminal buds of the young limbs.

The apricot is about one year longer than the peach in coming into bearing, and bears its fruit on the young wood of the previous year, and also on spurs coming out from the older wood. I have no doubt but the apricot will succeed well in our climate with proper management. I am aware that the common opinion about Mobile is, that it will not succeed. I do not think, however, that this common opinion has been founded on the results of full and proper experiments. The apricot is a fine and very early fruit, and I shall very reluctantly quit trying to produce it. The tree blossoms very early indeed, in the spring, and on this account is quite liable to lose its fruit from the effects of frost. Some plan, I think, can be adopted, by which its blooming time may be retarded somewhat. The trees, if possible, should be planted on the north sides of buildings or fences—where this cannot be done, a thick covering of straw or something of the kind over the roots of the tree would, I think, keep the ground cool, and retard vegetation.

The proper soil for the apricot is a rich loam, and where this cannot be obtained naturally, it should be supplied artficially. This can easily be done by preparing a proper compost, and putting it in place of the natural soil. I know of no fruit tree that equals the apricot in rapid, handsome growth; indeed, it is so rampant that the most of the surface limbs should be shortened from one-third to one-half, every winter.

The apricot thrives well on peach stock, but our common or Chickasaw plum, is decidedly the best stock for it. I have about twenty young seedling apricots, from which I expect to derive a good deal of pleasure; some are from seed grown on my own trees, and I hope from these seedlings to obtain varieties that will do as well as I could wish.

In speaking of the apricot, I have said much more than I should have done if it was a tree in common cultivation, as the peach, &c. I do not pretend to know much about the cultivation of it, but have been trying, and shall continue to try, until I do know something about it. I fully believe that apricots may be raised here in great perfection, and I hope that many will give a full and fair trial, who have never yet done so.

The pear tree, unaided by art, is the most tardy of any of our fruit trees, in arriving at a fruit-bearing state. At the north, when grown from seed, from seven to twelve years is generally allowed for trees to commence bearing fruit; from grafts or buds, from five to seven years would be about the proper time. Some varieties will bear much earlier than others. I have some small trees which I think were two years old when I received them from the north, and this is their third year's growth with me, and several of them fruited this season. The above refers to pears on pear stocks. On quince stocks they may be safely expected to begin to fruit the second or third year from the graft or bud; their fruit-bearing capacity annually increasing for quite a number of years. Pears bear their fruit very much like the apple, on spurs or blossom-buds coming out from the old wood; the Duchess d'Angouleme, and a few other kinds, bear fruit on spurs, and also on the wood of the previous year's growth. I have had as many as fifteen fine Duchess d'Angouleme pears, on one limb of the previous year's growth, the tree on a quince stock.

The fine kinds of cherries will begin to fruit in from three to five years from the bud or grafts. In our climate, from three to four years may be properly set down as the time or age, when most varieties of the Duke, Bigarreau, and Heart cherries, will come into bearing. The above named kinds of cherries bear their fruit exclusively on spurs coming out from the old wood.

All fruit trees, provided they are well attended to, will come into a fruit-bearing state fully, from one to three years sooner here, in our warm climate, than they will in any of the northern states.

Pruning Fruit Trees—There are but few kinds of fruit trees that require much pruning, farther than to keep the heads of the trees in proper shape. Peach trees should be shortened-in every winter. This consists in taking off from one-third to one-half of the current year's growth of the surface limbs, as well as all such of the inside limbs as need to be shortened.

This shortening-in, or surface pruning, very greatly promotes the vigor and productiveness of the peach tree, supplying it annually, with plenty of young fruit-bearing wood in the interior of the head, which never can be the case when trees are permitted to grow in their own way. All dead and decaying branches, should be carefully taken away from the heads of all fruit trees. In all cutting or pruning operations, great care should be taken to cut the limb immediately above a bud, and in cutting peach trees, the cut should always be made just above a leaf bud; if made above a fruit bud, the limb cannot elongate from the fruit bud, and is compelled to die down to a leaf bud, which often happens to be a foot or two. Where there are three buds together, the middle one is a leaf bud, with but few exceptions; and where the fruit buds are single, they can readily be recognised by their plump, whitish appearance, while the leaf buds are slim and pointed.

I scarcely ever attempt to prune any of my fruit trees, except my peach trees, unless it

be to give the head a shape to suit me; and this shaping of heads ought to be done while the tree is young.

In our fine climate, pruning may safely be done in almost any month in the year, but wounds inflicted on trees in the summer, heal much sooner than at any other time.

ROBERT HARWELL.

Cottage Hill, Mobile, Nov. 9, 1850.

A HISTORICAL ESSAY ON TASTE.

BY H. T. BRAITHEWAITE.*

IN approaching a subject so varied and extensive as the Origin and Progress of Taste in Art, now principally in Architecture, it would not, I think, be unbecoming to request indulgence for the errors which may probably be made by one who does not belong to the profession, but who, nevertheless, perceiving in architecture a great and beautiful art, is desirous of devoting attention to it, for the sake of improving, by its means, his own knowledge and understanding of the principles of art. These—in nearly all the occupations of the muses—these fundamental principles are, in all arts, nearly or precisely similar. It is from the right comprehension of them, to anticipate, that taste, as we understand it now, may be said mainly to arise. In architecture, in poetry, in painting, in sculpture, it is alike necessary to observe those axioms of construction, execution and adornment which have been declared by common concurrence to be inviolable, and without observance of which it is impossible to produce a complete work. I say that unity of conception, regard of general effect, justness of proportion, constructive solidity, and the like, are indispensably necessary to the creation of anything which, by the air of nature it shall wear, shall communicate a just idea to the mind, answer the imagination in our presence, or haunt the memory in our absence, with the shape, the color, the sense, or sound of beauty, or with all of them combined. To speak generally, the violation of any of the primary principles would show an incompleteness or absence of taste. If we consider the subject more closely, taste is the result of a discriminative power of the intellect, which decides, in several or more objects, and consequently ideas of them, on that which most perfectly answers to her idea of, for instance, beauty—the effect of certain constituent causes, such as proportion, harmony, &c.; to her idea of, for instance, grandeur resulting from size, height, and the like,—an idea, I think, in some degree natural to man; if so, doubtless implanted by the Creator, and showing that the print of the Divine hand is left as well in the mind of man, as in all that it moulded, and it moulded all. It is probable, however, that the idea exists naturally in a very slight degree—the mind improving it to an observable point by its own almost unconscious observance of nature. Some wholly reject the notion of any innate ideas; the learned are divided on this point; the definition, too, of abstract notions is at all times difficult.

To resume. According to the experience of the mind by observation, arising from the multiplicity of objects observed and compared, will the power of justly discriminating be developed, always provided that the principles of art, *which are natural*, be allowed to guide; and the understanding so educated will acquire, as it were, a wisdom with respect to form, color, and all other external attributes of nature, and, imitatively, of art. Whether any may justly argue that that quality, which we call taste, originally existed as such in the human mind, is, therefore, more than doubtful; but there was doubtless innate in it an admiration of the works of nature, a sense of connection with created

* From the London Builder.

things,—man being, in fact, himself but a link in God's chain of creation; and it is but according to experience to suppose, there resulted a preference for this or that form, just as the mind was more or less charmed by the images transmitted to it through the senses.

Thus even with respect to the works around us, you would find in men of different climates, or accustomed to different scenery, a diversity of taste: he whose native land is a very garden adorned with an endless variety of foliage, rife with flowers, intersected by by rivers, and also thronged with graceful animals, and birds of all brilliant hues and modifications of song—such a man, I say, would probably possess a taste for that which is florid, rich, vivid in idea; his feeling would be rather for the beautiful, than for the grand; he would prefer that which charms to that which astonishes;—the fault, perhaps, of his taste, would be an inclination towards redundancy; the advantage of it, a sparkling gorgeous fancy; a bright imagination; a magnificent versatility of thought; and, perhaps, a capacity for detail. On the other hand, a man accustomed to the waste sublimity of the desert, would possess a corresponding taste for extent, even for boundlessness; an inhabitant of a mountainous region would admire what is lofty, aspiring, towering, free; the capacity of the two last would probably be for generalising; and with respect to what is free, we are well aware that both Arabs and Swiss are noted for their devotion to liberty. A maritime nation would prefer the bold, strong, extensive. Such would be the taste of each of these with respect to nature; but it is curious to observe, how, when man came by degrees to express his mind in buildings, he appears in certain respects concerning art, to have sought that which he had not in nature around him; as though in some lands he had said—I have no mountains—I will build them; I will raise something that shall overawe its own creator—something vast, by which I myself shall be astounded—and so, further, according to the excess of the designing mind above its fellows, was the amount of awe and wonder inspired among them. But this subject will further develop itself as we advance, and, having premised thus much concerning taste in general, I will proceed to consider it more particularly with respect to individual nations. Of the earliest building of the world, such as the ark, probably by no means elegant, or the tower of Babel, we should think a huge, unsightly mass, possessing no element of the sublime, but that of size, it is not necessary to dilate. Whether the latter was really built, as we have seen it drawn, like a huge snake rising on its coils, curling up to heaven, and most industriously lifting the nations to the stars, is of little moment; but it was probably built of a kind of brick, cemented with the bitumen that abounded in the Babylonian territory; and as the object was to build to heaven, it would no doubt be raised in a great hurry, and with little regard to design. It is not *here*, then, we shall look for taste. In passing, we might observe, that the scriptural story is strongly resembled by the heathen fable of the giants piling Ossa on the top of Pelion to dethrone Jove. But as we shall have occasion to return to Babylon, let us pass into Egypt, historically more ancient. Here we find the sublimity of magnitude extraordinarily developed; a massiveness that is suggestive of eternity: and an imitation of nature in many respects unbounded. Here are the mountainous pyramids; here is the Sphinx, whose head only now rises above the surrounding deserts, once thronged by its superstitious worshippers. Here are the palaces, where their kings dwelt; the temples where their priests deceived; the tombs which have given up their dead for the daily inspection of the curious in modern museums, where death itself has become the subject of impertinence.

The Sphinx was originally a huge block of stone that stood before the pyramids, and it shows the *grand* taste of the Egyptians to have converted it into the wonderful figure which still remains. The taste of the Egyptians was evidently for a solid, gloomy gran-

deur; they delighted in massive pillars, in dusky chambers, in broad effects of light and shade, in dark labyrinthine walks, in cavernous edifices guarded by gigantic recumbent figures, or the huge forms of deities, gaunt, awful, oppressive. Their observance of nature was great: it is asserted by some that they derived the fluted column from the simple idea of reeds bound together at the top—and their sacred language is an endless succession of the forms of birds, beasts, fishes and reptiles—in fact, we may say, they *wrote* in beasts and reptiles: many of their vessels and ornaments are evidently imitated from nature, with great quaintness and versatility of design; but in all they seem to have practiced an almost disproportionate solidity of construction. Theirs was evidently an architecture of symbolism: their principal buildings being for sacred purposes, they seemed determined to have written the story of their creed in every pillar, every stone; and by that means to give their designs, as it were, an actual, positive sense—to make them a species of embodied poetry—so that every man on seeing the temple, would at once be able to read in its form, proportion, number and color, the scripture of the god to whom it was dedicated and belonged. In their flat country, we perceive that they made their edifices mountainous; that that regard of death with which their religion inspired them, extended a sobering influence to their works; and certainly some of their vast temples could have derived no extra cheerfulness from the fact that they were only magazines of mummied crocodiles and cats; and finally, to repeat, we perceive that their architectural taste was for a gloomy sublimity of symbolism, and that if we were to seek a symbol to express it, we might call it a sarcophagus. With respect to literature, at which I shall occasionally take the liberty to glance, we have, so far as concerns the Egyptians, small idea of their taste; their painting, such as it was, and their sculpture, wonderful as is the latter in respect of manual skill, appear to have existed only as subordinate aids to the architect, and are simply entitled to share in the above general remarks.

A most ancient, curious, and at one time mighty people, were the Chaldees; a tribe of people, formed probably, from the conflux of many others in those well watered plains, who inhabited the districts of Babylon and Nineveh, and who boasted a dynasty descended from Nimrod, according to some, the same with Ninus and Belus,—the god of the tower of Babel. It is probable they had some connection with the Egyptians. The monuments of Nineveh, recently discovered, wear certainly in many respects an Egyptian appearance. If you examine them, you will observe a similar mystical taste,—a profound disregard of perspective, and a great aptitude for expressing things by signs: thus, a castle sometimes bears a marvellous resemblance to its namesake of chess; a distant river is represented by very lively fish in single file; while, to illustrate the country beyond, you will probably find several indigenous trees appearing to grow out of the fishes' backs. The carvers of the Nineveh marbles seem, nevertheless, to have had a feeling after truth. In the treatment of animals, they may be said comparatively, to excel: the lions in the lion hunts are full of vivacity and expression, although sometimes rather symbolical (I mean in size) in the teeth and claws. To prove what I say concerning the truth of these lions, you will find depicted on the tips of some of their tails, a claw, whose existence had of late years been disputed, but it is now again established. The procession of captives and beasts on the obelisk is in several respects, and considering its probable antiquity, admirably executed.

To turn to history, we are told almost incredible wonders of Babylon. The walls were 300 feet high, 80 feet thick, built of brick and bitumen; flanked and protected with numerous towers, adorned with a hundred brass gates, and sixty miles in circumference. We are told the Euphrates was enclosed by piers in a straight canal through

the city; that there was a bridge of huge stones fastened together with lead, and bound with iron chains: to the west stood the tower of Belus, or Babel, enriched with an infinity of spoils and golden images; in the New Palace, Nebuchadnezzar, it is said, had raised a hanging garden, on sub-arched terraces, to the walls, to gratify a Median wife, who, having come from a wooded and mountainous country to one which consisted of a vast, flat plain, intersected with streams, and interminable rows of willows, missed, in accordance with what we have observed of natural taste, the beauties of her native land, and desired them reproduced. Now, if all this account were true, it would show that the Babylonians had not only a taste for the sublime, but also for the beautiful; and, besides, had attained a pitch of excellence in the execution of art. Babylon having vanished from the earth under an irresistible doom, we have not even a trace of it left whereby to judge; but it is said to have been about the size of Ninevah, and Ninevah has been proved, by the discoveries of Mr. Layard, to have been sixty miles in circumference,—the exact girth, under the expression of a three days' journey, assigned to it in the book of Jonah. We will then suppose a considerable, at least some portion, of the Babylonian account to be true; and will thence observe, that their taste was kindred to the Egyptian; they might even improve themselves by maritime influences at second hand, having conquered the great and industrious city of Tyre, and carried off all its works of art; and they might, too, have turned to good purpose the genius of the captive Jews educated by Tyre. Their buildings appear to have been raised on huge platforms, in graduated masses, the Pyramidal appearing to be the prevailing form of general outline. The bulk of their walls certainly seems proved by modern discovery; and we have also good reason to believe they had considerable power to work in metals. Altogether their taste was for the great and astonishing, for vastness of design, and solidity of execution.

Persepolis is suggested by the consideration of Babylon. Certain discoveries have been made concerning it, and it appears, in accordance with the ruin, to have been built on great platforms, with elevations of huge pillars, still on the graduated principle. It is also probable that the chambers of the palaces were similar to those already discoved at Nimroud, thickly walled and surrounded with bas-reliefs. Generally of Egypt and Assyria, it may be observed, that their taste, although not guided by a knowledge of proportion and arrangement, was for the expression of power, for great cost, and works, the result of almost superhuman labor. They cultivated geometry, astronomy, music—though the proportion of harmonic sounds was not discovered till long after by Pythagoras,—astrology, alchymy, and magic,—but everything was rendered subservient to priestcraft. They had also an idea of color; but as they attained in it only to brilliancy, its effect was certainly more gaudy than harmonious, and must have caused a strange contrast with the grandeur of their other works.

We have but little record of Persian architecture; but there is a singular account of the ancient capital city of Ecbatana. It is said that Dejoces, the king, built it on a hill, with seven walls, but they were so disposed, rising, one within another, to the summit of the hill, that the ramparts of each wall should show above the one in front. These elevated portions were each painted of a different color, so that the appearance in the distance would have been, as it were, of a horizontal rainbow. In this we observe principally a taste for effect and display. This taste was very strikingly developed in the Persians; their idea of magnificence and pomp displays itself in many particulars of their history. Their literature, like that of the other nations, was chiefly mystical and symbolical. In religion they were fire-worshippers, performing their rites in the open air, until Zoroaster ordered their fire altars to be enclosed in temples, of which there were three kinds—the

first, mere oratories, where the sacred fire was kept in lamps; the second, public fanes, where the fire was kept, like that of the vestal virgins at Rome, continually burning on altars; the third, the grand abode of the arch priest, visited only at certain seasons by indispensable law, such as bound the Jews. The chief temple stood in the city of Balck till the seventh century, when, on persecution by the Mahomedans, the followers of the Magi fled to Carmania, whither, no doubt, they carried their arts and their taste—and raised another temple. But you see that their worship was purer than that of Egypt; and it is not unreasonable thence to argue that their ecclesiastical buildings were less the subject of gross ideas. Their religion flourished among the Parthians, Bactrians, Chorasmians, Sacans, Medes and other nations: from this we may guess somewhat at the temple architecture—in fact *the* architecture of these nations; for it is evident that the grandest efforts of the art have been in all ages dedicated to the purposes of religion, from the time of Osiris to that of the Divine Redeemer. The Indians, whose original doctrines appear to have been borrowed from Zoroaster, raised in old time many curious and striking edifices, which appear to be better understood by inspection of drawings than from description; but they possess, many of them, a bold and swelling outline—perhaps, in some, a disproportionate width, and, besides a singular elaboration of detail—not uncommon among semi-barbarous nations. There is also a great massiveness, even heaviness, about them, which we have found in the buildings of other Pagan nations; whence we can only suppose that the taste of the Indians was much affected by their lifeless creed. This heaviness is striking in Pagan architecture, while the Christian Gothic has the very opposite characteristic. Concerning early Arabian taste—to leave, at present, the Saracenic—there is little to be said: it is probable there was little of it, so far as architecture is concerned. The religion of the Arabs was Chaldean: they cultivated poetry, possessed a brilliant and versatile imagination, and supported a good moral doctrine.

It is impossible here to investigate the taste of the Phœnicians or of the Ethiopians; but there was nothing in either very dissimilar from that of contemporary nations. In fact, we find the extraordinary and grotesque religion of all these ancient nations to have greatly shackled their arts, and to have given them, with a taste for pomp and grandeur, a sort of necessary absurdity of purpose. The Jews were more ancient than all; but from their religion it was necessary to reserve them to this place, on account of certain remarks generally applied to the rest, in which they would not be included. Being for many centuries a pastoral and nomad race, they appear to have had little opportunity either for the acquisition or the display of taste. The mention of their name immediately suggests the Temple of Solomon. The king's predominant taste, whether or not suggested originally by a far higher feeling, was, according to oriental nature, for magnificence; and we find that he built his own palaces with a profusion and splendor of ornament little inferior to that displayed in the Temple. That building seems not to have been striking, either with respect to its proportion or its size: it was somewhat Egyptian, and the adornments of it were Tyrian. We may hence assert, while, in the latter remark, the taste in the art of the Tyrians is suggested, that native taste was but little among the Jews, and that they were, in respect of taste at all, far behind either Egypt or Assyria. They had always, however, great natural genius, and their want of taste arose rather from their long pastoral habits above referred to, than from any natural incapacity. Time afterwards did for them, and now does, more than he has done for any other race. In our days, the leaders of taste in several arts, of which we will only instance music, are Jews. Of their ancient literature it may be remarked, that besides its insprired character, it affords a perfect model of sublimity and power, not to speak of

wisdom and grace: numberless instances might be brought forward to prove this, but it is sufficient to point to the description of the war-horse in the book of Job.

We have now traced the varieties of taste among the earliest nations of the world: we have seen that the Egyptians loved the huge and massive and heavy; that the Assyrian taste was similar; that the Persians, Jews, &c., favored the more showy and magnificent; we have found it grand in all. Hitherto, then, the characteristic of taste in art, has been GRANDEUR. But in none have we found *the pure, the chaste*. We ask for it: the Sphinx and the winged bull shake their heads, but being pressed, nod abashed to Greece. It is to Greece, then, in order that we may add to the taste we have already acquired, that purity which is indispensable to a right taste—it is to Greece that we must sail.

H. T. BRAITHWAITE.

EXPERIMENTS IN TRANSPLANTING FOREST TREES.

BY A. COLLIER, SOUTH GROTON, MASS.

RESPECTING the transplanting of Chestnut trees, I have seen the experiment tried by others, and have tried it myself, but without success. I have taken them up much the same as we take up nursery trees, and planted them with care, but a speedy death was sure to follow. Finding that experiment a fruitless one, I resolved to take another method, which was to remove them from their native localities early in the spring, by cutting around them at a proper distance, (which was about eighteen inches or two feet from the tree,) with a sharp spade, and raising them carefully with as much earth as would adhere to their roots, placing them one at a time on a wheelbarrow and trundling them as gently as possible to their place of destination. Having previously dug the hole, the subject was immediately placed in it, to prevent injury from the sun or air, taking heed not to cover the roots too deeply. In this way I was pretty sure of success, as I was well aware that even the most tender evergreens flourish well under such treatment, for my observation and experience had abundantly proved it.

I was considerably elated with my experiment when I beheld the buds opening and the leaves spreading out in all the grandeur and magnificence which it was wont to display in its native forest. I bid my friends observe it as they passed, and signified to them that I had surmounted the difficulty of transplanting a chestnut tree. My trees flourished well through the summer and fall, and when the leaves were no longer an ornament, they drooped as usual. The next spring I observed on the opening of the buds, that the leaves looked sickly and to my great mortification that my trees were gasping hard for breath, and were evidently going into a decline, and finally died like their predecessors.

The question is whether the trees died from the effect of transplanting merely, or from an exposed situation, having previously been sheltered by the woods? Would not a few wisps of straw wound around the trunk of the trees, and some of their main branches, have been a barrier against the depredations of the frost and cold, so as to innure them by degrees to a more exposed situation? Is the chestnut less hardy than many other deciduous trees, say the Maple, Ash, Elm and the Oak? Last February I tried the plan of the frozen ball, so much encouraged in your valuable treatise upon horticulture; I went to the forest to look out for a subject of experiment. Having found one, I readily commenced digging around it, and to my surprise I had the task accomplished much sooner than I had expected. I left it to freeze; in a few days I returned with a pair of oxen and a stone boat, to take up my tree and transport it to the place of destination. The

tree stood between two pines; I easily conceived the idea of running a chain across from one to the other, and hooked a tackle to it, and fearing lest I should injure the bark by drawing directly under the ball, in a square, so that I could take two draft chains and hitch to the four corners, and bring up the loops in the form of a bail, to which I attached the lower block of the tackle, and by means of a snatch block attached to a neighboring tree, and my oxen to the fall, in a moment it was swinging at a sufficient height to admit me to run two poles across the hole on which I run the stone-boat under the ball and and lowered it down carefully on it. But the ball was not frozen sufficiently, and I lost considerable dirt. I however succeeded in retaining about two-thirds of a cart load with the tree, but that was somewhat crumbled and broken. As the tree had a handsome head, I hesitated to cut into it, though strongly urged to do so by my friends; not knowing what proportion to cut off, I let it remain, concluding that the chestnut was rather a tender tree, and would not endure much pruning. The whole experiment proved a failure. Although I have been baffled in my undertakings to transplant this beautiful, though common forest tree, and make it an ornament nearer home, I am not willing to give up so laudable an enterprise so long as there is a reasonable hope of success.

Now, if there is any course which you would recommend me to take to effect my object, I will pursue it with fresh vigor, and one day will give you the result of the experiment.

There is a young planter in my neighborhood who has set about raising a few chestnut trees on a piece of ground which he wished to ornament; he made many attempts, but all in vain; it seemed as if the fates were against him; at last with commendable zeal he planted the *nuts*, which came up in the spring and have flouished finely, and are now between seven and eight feet high. But I do not want to wait so long, as I wish to set them by the road-side; and the labor to protect them from stray cattle till they are old enough to stand unprotected, would be more expensive than to transplant large trees. When you give me the desired information, you will please to state what proportion of top to leave on the chestnut.

As to all the rest of the ornamental trees, both deciduous and evergreens, which we transplant, I am well versed in the manner of treatment, both in transplanting and afterwards. Regarding the deciduous trees; when I have not as good a supply of roots as I should wish, I trim nearly to bare poles, except a few spurs to aid them in starting; but if a tree is not vigorous enough to force out a sprout it will rarely succeed afterwards. It is an old adage that "experience teaches a dear school, but fools will learn in no other." And though I have no *aching* desire to claim its application to myself, I have, as I will own, learned a few lessons in that school which I trust will be of service to me in years to come. If I could have had the perusal of your valuable work, and useful hints on the Transplanting of Fruit and Ornamental Trees, both deciduous and evergreens, as given from the experience of your numerous correspondents, it would have saved me a great deal of pain, both of body and mind. Respecting what is laid down in your important work upon the pruning of evergreens, I know it to be a fact that they scarce ever need the knife or saw to improve their natural outline. But when evergreens are transplanted, it should always be done in the frozen ball, or in the clod, especially the white pine, spruce, hemlock or firs, and the more carefully it is done, the surer will be the success. Indeed, I have taken them up with a clod of earth about their roots, and transported them thirty miles, in a waggon, and planted them with as good success as I could reasonably ask for, and far better than I could have expected. But to take them up as we do small deciduous trees, without the clod of earth, the chance is comparatively small; and accord-

ing to my experience and observation, twelve out of twenty will surely die. Now, the question arises in my mind, why should a chestnut tree be more difficult of removal than many other deciduous, and even evergreens. It is a native of our soil; it graces our noble forest, and crowns our highest hill, standing in the most bleak places, and seems to glory in its towering majesty, stretching out its mighty arms in defiance of the storm-warfare of centuries, till it sometimes attains to the size of ten feet in diameter.

I have grafted the chestnut with good success, and I have known the scions to grow from four to six feet in the first year; indeed, I think the success in grafting the chestnut to be fully equal to that of the apple, and any one who wishes to add usefulness to beauty, can do so with perfect safety, and improve their quality of chestnuts, by grafting. I do not wish to be lengthy in my remarks, but I have such a love for shadowy streets and lanes, especially on sultry days, that I cannot forbear to lay before your readers the result of an experiment of mine in bringing about this good work.

Four years ago I resolved to set a row of trees by the side of one of the lanes in our village. I accordingly measured the ground, and found that it required twenty trees. I thought I had a hard task to perform, and called on my neighbors to lend a hand in a public work, but I found that none had time to spare to aid or encourage such *notions*, so I resolved to do it alone. I went some little distance into the woods, to a fine little copse of rock maples, [or sugar maples] and in about five hours I succeeded in digging my number. The trees which I selected were about one inch and a half in diameter at the base; as they were sheltered by some aged pines, they grew remarkably slender, and seemed unable to sustain their own weight; and as there was a drouth in the fall, I took them up with a clod of earth attached to them, and set them together by the side of a tree; not having conveyance at hand I left them there three or four days, when they were conveyed home. I cut their tops off to ten or eleven feet, not leaving a branch or scarcely a spur upon them. I set them upon light, gravelly ground, and when I dug the holes the earth was as dry as snuff. I took heed not to cover the roots too deeply, but placed some stones on them, to prevent the frost from throwing them out, which answered a two-fold purpose, both to keep the tree firm, and to keep the soil pressed about the roots when the frost come out of it in the spring. I mention this, partly to show that this kind of tree will grow with less care in transplanting than some other varieties, though with more care, the better they will flourish. It was about a days' work to set them, and half a days' work to stake them up to guard against cattle. Counting time as money, the expense did not exceed three dollars; and though they set in an exposed, bleak place, I had but two failures, which were soon replaced. Some of them made a more rapid growth the first year than they would have done in their native forest. I have now the gratification of seeing as fine a row of trees as there is in the town, with the prospect of yearly additions to their beauty. On meeting my neighbors, some jocosely remarked that I had got my *bean-poles* set in season; while others said with a *sneer*, "I guess they will grow like bean-poles." I was, however, so elated with my success, that I resolved to set a row on the opposite side of the lane, which I did in a year two after. This was attended with a little more expense, and better success. I got trees varying from two to three inches in diameter, and planted them in the same way. There are fifty-five trees in all. They have all flourished well, and bid fair to add much beauty to the landscape, and afford as pleasant a shade as one could wish; may others, interested in the beauty of shadowy lanes, go and do likewise. How many there are who spend three times as much money for that which is useless, and a great deal more time than it would require to plant a hundred such trees, in the course of a year, which, if rightly employed in ornamenting and improving the

landscape, would, in process of time, in many places, turn the bleakest spots to gardens of Paradise.

To resume my topic, I took those trees from a sheltered situation, and placed them in a position where the bleak north-westerly winds had a fair sweep at them, and *old Boreas* has not neglected to open his battery of hail, frost, and snow, upon these juvenile sons of the forest, but they are unscathed, and *spring* annually decks them in a drapery of the finest foliage.

Some years ago, I resolved to set a row of trees near the village, on the edge of a meadow. I chose the sugar maple, and planted a fine line of trees, which flourished for a season and then died. I reset the row for several years, but without success. I then carted two or three loads of good soil to each hole, and then set them on the mounds thus raised. They now thrive well; but when their roots extend beyond the mounds, will they continue to flourish, or will they grow mossy and die?

In conclusion, I will venture to predict that whoever plants rock maples in clear meadow land, with an expectation of seeing them flourish, will be sadly disappointed. This is because they flourish in low, wet land, where the land is hard, and even do well in running water and ditch banks; and they will flourish in moist land, (like willows planted by the water course,) where the soil is not meadow mud. Yours truly, A. Collier.

South Groton, Mass., Dec. 28, 1850

Remarks.—Our correspondent has, we think, failed in planting Chestnuts, because he has neglected to observe that they have strong *tap roots*—running directly downwards, and which he probably cut off without mercy in removing them. This tap root is always found in chestnuts, oaks, and tulip trees, &c., but not in elms, maples, and ashes, which accounts for the comparative facility of removing the latter. If he would take pains to *ball* a chestnut, and include the tap root in the ball—at the same time reducing the top by shortening-back every limb about one-fourth, at the time of transplanting, (for a chestnut should rarely be touched with a knife at any other time,) we think he would have no cause to complain of want of success. Ed.

SUCCESSFUL REMOVAL OF FRUIT TREES.

BY M., ONEIDA COUNTY, N. Y.

Dear Sir—This last spring I had occasion to remove from one part of my garden to another, 36 fruit trees, the greater part plums. As soon as the ground would admit, it was done, and so successfully, that I am induced to give your readers a description of the way it was managed. The plum trees blossomed and bore fruit equally as perfect as others in my garden, which had been undisturbed.

My gardener who transplanted the trees, first pared off carefully the top soil, until he came to the upper tier of roots; then dug a trench, about eighteen inches from the body of the tree, so deep that he could cut off the tap or any other roots too low to be easily saved. When the tree was cut loose from its position, a strong shovel was put under, two men took hold of the body, raised it up, and carried it to another place, where a hole had been previously dug, (after cutting off all bruised roots,) and immediately planted.

I presume it is precisely on the same principle as that described by Mr. Perkins in a former vol.*—the earth adhered firmly, but as we could not remove them all in one day,

* In Mr. Perkins' the ball was *soaked* with water, and allowed to get firm before removal.

the next day the earth had got too dry, for it *fell* off. We then waited for a soaking rain, and the *day after* finished the remainder.

I think no one could have told from their appearance that they had so recently been disturbed. They were shortened-in, not more so, however, than every fruit tree in my garden. I think it more than likely, that there may be nothing new in the above manner of removing trees, but to myself it was very novel and interesting.

I have growing on my premises thirty-six cherry trees, from four to seven years from the bud. I have never allowed any side branches to be removed, (merely shortened-in every June)—two of the above trees did not develop branches any lower than five feet from the ground. On all the others are limbs from one foot to eighteen inches high. The two trees with no shoots lower than five feet, ooze gum—and none of the others.

Now, is this accidental, or is it from the fact that the bodies of the other trees are more perfectly shaded from the sun? It is best not to be too certain in such cases, for facts are stubborn things, and future years might upset any theory.

I thank you sincerely for the elucidation of the mystery why the Wistaria sinensis would not grow with me. In the spring I will take your advice, and procure thrifty plants if possible. M.

Oneida County, Dec. 21, 1850.

WHAT MAKES THE BEST FARM HEDGE.

BY. A. D., NEW-YORK.

Dear Sir—The subject of live hedges is an interesting one to the farmer in some parts of the country, especially in sections where both stone and timber are comparatively scarce. It seems to be pretty generally conceded now, that the English Hawthorn, with which the farms are almost entirely fenced in Great Britain, is not adapted to this climate, so that we must look around for a substitute. In Delaware, I have observed that a native thorn called the New Castle, has been considerably employed for hedges. It makes a good and substantial fence, but I noticed on a recent visit to that state, that the use of it did not spread much among the farmers. On inquiring the reason, I was told that the plant was very liable to injury by the borer and an insect, and on the whole had not given satisfaction as a farm fence.

I have seen a hedge of the Osage Orange upon the boundary of a garden near Philadelphia. It is five feet high, well clipped, and presents a very handsome appearance when covered with its rich glossy leaves. Being very thorny, it makes a thorough barrier against man or beast. I see by the papers that this plant has come into use for farming purposes in Illinois—especially in some parts of the prairies, and that Professor Turner, of Jacksonville, has planted several miles of it. From my conversation with my friend at Philadelphia, I am led to think that it requires too much and too constant clipping—say twice or thrice a season, to suit the farmers generally in this country; though for gardens it is not easily surpassed.

I should be glad to hear your experience, and that of some of your readers who have planted hedges extensively, as to what will make the hardiest and best farm hedge, taking into account easy cultivation, durability, and adaptation to a variety of soil and climate.

I saw not long ago, a line of hedge which was made by planting the seeds of the *Siberian Crab*—a small ornamental variety of the apple, which is well known in the nurseries, and sought after for the beauty of its little fruit. The tree, naturally, is a small

one, and has not exactly thorns, but branches which become somewhat thorny and resisting. It naturally forms a thicket with a good many branches, so that it takes and keeps the hedge form very easily. He sowed the seeds of these crabs in the garden, and when the seedlings were a year old he transplanted them into the row, where they were to grow as a hedge. They were set six inches apart, in a single row, and the tops were cut off within three or four inches of the ground the same spring they were planted. They made a fine growth, and the next spring were again cut down to within six inches of the ground. This made the hedge bushy and thick at the bottom.

The hedge is now five years planted. It has attained its proper size, and having been regularly trimmed every spring, has become one of the thickest and most impenetrable hedges I have ever seen. It requires trimming but once a year, and seems to me well able to take care of itself the rest of the time. Besides this, it has a fine appearance in the spring, when it is covered with blossoms, and in the autumn when it begins to bear considerable fruit. Would not the Siberian Crab or its seedlings, make a good farm fence?

The locust has been used by some persons as a farm fence, and it makes a loose barrier very quickly. But it is difficult to keep within bounds, and it is apt to throw up suckers and thus take up the ground wanted for tillage. The Three Thorned Acacia—though it does not sucker, and is abundantly thorny, does not grow thick enough to make a complete hedge without a great deal of clipping.

The Buckthorn has been highly spoken of, and it makes, I believe, a first rate hedge for the garden. But will it answer for the farm, and what is preferable to it?

Yours, &c. A. D.

New-York, Jan. 7, 1851.

REMARKS.—We give the preference to the *Buckthorn*, over any plant yet tried, for farm hedges. It will grow in any soil, makes a thick hedge with very little time or labor, needs clipping but once a year, and may be trimmed when the leaves are off, at any time when the farmer has least to do. Besides this, it is less liable to be attacked by disease, insects or vermin, than any other hedge plant in our knowledge, and may be raised from seed as easily as peas. It is a little wanting in thorns when young, but gets stiff enough to turn cattle while it has been sheared three or four years. ED.

MR. DOWNING'S LETTERS FROM ENGLAND.

I received in London, a note from the DUKE OF BEDFORD, which led me, while I was in Bedfordshire, to make a visit to Woburn Abbey.

This is considered one of the most complete estates and establishments in the kingdom. It is fully equal to Chatsworth, but quite in another way. Chatsworth is semi-continental, or rather it is the concentration of everything that European art can do to embellish and render beautiful a great country residence. Woburn Abbey is thoroughly English; that is, it does not aim at beauty, so much as grandeur of extent and substantial completeness, united with the most systematic and thorough administration of the whole. Besides this, it interested me much as the home for exactly *three centuries*, of a family which has adorned its high station by the highest virtues, and by an especial devotion to the interests of the soil.* The present DUKE OF BEDFORD is one of the largest and most scientific

* The first JOHN RUSSELL, DUKE OF BEDFORD, came into possession of this estate in 1549, and it has descended in the family ever since. In one of the apartments of the palace is a series of miniature portraits of the heads of the family in an unbroken line, for 300 years.

farmers in England, and his father, the late Duke, was not only an enthusiastic agriculturist, but the greatest arboriculturist and botanist of his day, whose works, both practical and literary, made their mark upon the age.

The Woburn estate consists of about thirty thousand acres of land. There is a fine park of three thousand acres. You enter the approach through a singularly rich avenue of evergreens, composed of a belt perhaps one hundred feet broad, sloping down like an amphitheatre of foliage, from tall Norway spruces and pines in the back ground, to rich hollies and Portugal laurels in front. This continues, perhaps half a mile, and then you leave it and wind through an open park, spacious and grand—for a couple of miles—till you reach the Abbey. This is not a building in an antique style, but a grand and massive pile in the classical manner, built about the middle of the last century on the site of the old Abbey. I have said this place seemed to me essentially English. The first sight of the house is peculiarly so. It is built of Portland stone, and has that mossy, discolored look which gathers about even modern buildings in this damp climate, and which we in America know nothing of, under our pure and bright skies—where the freshness of stone remains unsullied almost any length of time.

Woburn Abbey is a large palace, and containing as it does, the accumulated luxuries, treasures of art, refinements, and comforts of so old and wealthy a family—(with an income of nearly a million of our money,) you will not be surprised when I say that we have nothing with which to compare it. Indeed, I believe Woburn is considered the most complete house in England, and that is saying a good deal, when you remember that there are 20,000 private houses in Great Britain, larger than our President's House. To get an idea of it, you must imagine a square mass, about which, externally—especially on the side fronting the park, there is little to impress you—only the appearance of large size and an air of simple dignity. Imagine this quadrangular pile three stories high on the park or entrance front, and two stories high on the garden or rear, and over two hundred feet in length, on each side. The drawing-room floor, though in the second story, is therefore exactly on a level with the gardens and pleasure grounds in the rear, and the whole of this large floor is occupied with an unbroken suite of superb apartments—drawing-rooms, picture galleries, music-rooms, library, etc.—projecting and receding, and stealing out and in among the delicious scenery of the pleasure grounds, in the most agreeable manner. There is a noble library with 20,000 volumes; a gallery, one hundred and forty feet long, filled with fine sculpture—(among other things the original group of the three graces, by Canova,) and a sort of wide corridor running all around the quadrangule—filled with cabinets of natural history, works of art, &c., and forming the most interesting indoor walk in dull weather. Pictures by the great masters, especially portraits, these rooms are very rich in, and among other things I noticed casts in plaster, of all the celebrated animals that were reared here by the late Duke.

Now, imagine the quadrangule continued in the rear on one side next the sculpture gallery, through a colonnade like side series of buildings, including riding house, tennis' court, etc., a quarter of a mile, to the stables, which are of themselves larger than most country houses; imagine hot houses and conservatories almost without number, connected with the house by covered passages, so as to combine the utmost comfort and beauty; imagine an aviary consisting of a cottage and the grounds about it fenced in and filled with all manner of birds of brilliant and beautiful plumage; imagine a large dairy, fitted up in the Chinese style with a fountain in the middle, and the richest porcelain vessels for milk and butter; imagine a private garden of bowers and trellis work, embosomed in creepers, which belongs especially to the Duchess, and you have a kind of sketchy out-

line of the immediate accessories of Woburn Abbey. They occupy the space of a little village in themselves; but you would gather no idea of the luxury and comfort they afford did you for a moment forget that the whole is managed with that order and system which are no where to be found so perfect as in England. I must add, to give you another idea of the establishment, that a hundred beds are made up daily for the family and household alone, exclusive of guests. The pleasure grounds, which surround three sides of the house, and upon which these rooms open, are so beautiful and complete that you must allow me to dwell upon them a little. They consist of a series of different gardens merging one into the other, so as to produce a delightful variety, and covering a space of many acres—about which I walked in so bewildered a state of delight that I am quite unable to say how large they are. I know, however, that they contain an avenue of Araucarias backed by another of Deodar Cedars in the most luxuriant growth—each line upwards of 1,000 feet long. A fine specimen of the latter tree, twenty-five or thirty feet high, attracted my attention, and there was another, twenty-five feet, of the beautiful Norfolk Island Pine, growing in the open ground, with the shelter of a glazed frame in winter. These pleasure grounds, however, interested me most in that portion called the American garden—several acres of sloping velvety turf, thickly dotted with groups of Rhododendrons, Azaleas, &c., forming the richest masses of dark green foliage that it is possible to conceive. In the months of May and June, when these are in full bloom, this must be a scene of almost dazzling brilliancy. The soil for them had all been formed artificially, and consisted of a mixture of peat and white sand, in which the Rhododendrons and Kalmias seemed to thrive admirably.

Besides this scene, there is a garden composed wholly of heaths, the beds cut in the turf, one species in each bed, and full of delicate bells; a parterre flower garden in which a striking effect was produced by contrasting vases colored quite black, with rich masses (growing in the vases) of scarlet geraniums. I also saw a garden devoted wholly to Willows, and another to Grasses—both the most complete collections of these two genera in the world—the taste of the former Duke—and with which I was familiar before-hand, through the "*Salictum Woburnense*," and Mr. SINCLAIR'S work on the "*Grasses of Woburn*."

The park is the richest in large evergreens of any that I have ever seen. The planting taste of the former Duke has produced at the present moment, after a growth of fifty or sixty years, the most superb results. The Cedars of Lebanon—the most *sublime* and venerable of all trees, and the grandest of all evergreens, bore off the palm—though all the rare pines and firs that were known to arboriculturists half a century ago are here in the greatest perfection—including hollies and Portugal laurels which one is accustomed to think of as shrubs, with great trunks like timber trees and magnificent heads of glossy foliage. A grand old Silver fir has a straight trunk eighty feet high, and a lover of trees could spend weeks here without exhausting the arboricultural interest of the park alone—which is, to be sure, some ten or twelve miles round.

A very picturesque *morceau* in the park, enclosed and forming a little scene by itself, is called the *Thornery*. It is an abrupt piece of ground covered with a wild looking copse of old thorns, hazels, dog-woods and fantastic old oaks, and threaded by walks in various directions. In the center is a most complete little cottage, with the neatest Scotch kitchen, little parlor and furniture inside, and a sort of fairy flower garden outside.

All this may be considered the ornamental portion of Woburn, and I have endeavored to raise such a picture of it in your mind as would most interest your readers. But you must remember that *farming* is the pride of Woburn, and that farming is here a matter of immense importance, involving the outlay of immense capital, and a personal

interest and systematic attention which seems almost like managing the affairs of state. About half a mile from the house is the farmery—the most complete group of farm buildings perhaps, in the world, where the in-coming harvest makes a figure only equalled by the accommodations to receive it. Besides these there are mills and workshops of all kinds, and on the out-skirts of the park a whole settlement of farm cottages. I can only give you an idea of the attention bestowed on details, and the interest taken in the comfort of the immediate tenants by resorting to figures, and telling you that the present Duke has expended £70,000, ($350,000,) within the past five years, in the farm cottages on this estate, which are model cottages—combining the utmost convenience and comfort for dwellings of this class, with so much of architectural taste as is befitting to dwellings of this size. Of course, a large part of this estate is let out to tenants, but still a large tract is managed by the Duke himself, who pays more than 400 laborers weekly throughout the year. The farming is very thorough, and the effects of draining in improving the land have been very striking. Above fifty miles of drain have been laid, in this estate alone, *annually*, for several years past.

You will gather from this, that English agriculture is not made a mere recreation, and that even with the assistance of the most competent and skillful agents, the life of a nobleman with the immense estate and the agricultural tastes of the Duke of Bedford, is one of constant occupation and active employment. Besides this estate, he has another in Cambridgeshire, called the "Bedford Level"—a vast prairie of some 18,000 acres reclaimed from the sea, and kept dry by the constant action of steam engines, but which is very productive, and is perhaps, the most profitable farm land in the kingdom. Yours, A. J. D.

GRAPE VINE BORDERS.

BY R. BUIST, PHILADELPHIA

Those who read the various periodicals of the day, and who reflect on the past, present and future, must have their risibilities frequently agitated by articles on the composition of grape vine borders. We have read of nothing from the days of Adam to Washington to compare with the blood and carrion of the recent days of grape growing. From such we must expect grapes far outvieing the land of Eschol or the graperies of Speechly. Every science has its hobby and every practitioner his ultimatum. In medical science the days of phlebotomy are gone, and horticulture is at present nauseated with offal and ammonia. What produces the rich and luscious grapes on the mountain sides of Southern Europe? What on the calcarious steeps in the vicinity of Paris, or the sandy alluvial of Thomery? What gives the exhuberant growth and heavy product of the famous vine at Hampton Court, or its more famous rival at Cumberland Lodge? We say a dry bottom, thin, warm free soil, with a regular periodical stimulant either of decomposed lava—mineral or vegetable substances. Of these two celebrated vines, the former is said to luxuriate in an old sewer, but that is a mere say so, and not a fact! the latter grows in the dry sandy loam of an old garden, on a sandy clay bottom that no roots will penetrate—perfectly natural soil, (as you may have seen it, and no mystery about it,) peculiar to that vicinity, and no doubt very genial to the growth of the vine, which should be analysed for the benefit of those who are affected with the carrion and composition mania.

Sometime ago, we saw a grape vine border made three to four feet deep, according to the avowed judgment of a recent writer, and though the drainage was perfect the vines did not grow in it; the second year the roots became rotten and musty—the composition

was too rich with shins of beef, heads and even whole bodies, of animal putrefaction. One half had to be removed, and the remainder incorporated with sandy loam from an old pasture. The vines were cut down, (those that were alive,) and replanted. They now do well and bear freely, but in wet seasons are subject to mildew.

Another, and on a larger scale, was made about eight years ago. The soil and every etc., etc., to carry the whole figure out for a four feet deep border, was carted *six miles;* the vines grew well for two years, and produced one good crop, when the roots all perished except a few near the surface. Every load of loam cost at least two dollars, independent of the animal "fixings," when there was abundance of light loamy soil and decomposed vegetable matter on the premises, to make a permanent and wholesome foundation for grape culture. About two years ago the soil was renewed, many of the old vines replaced and others cut down, and now they promise well. The error of those rich, deep borders, consists in their decomposing and becoming a solid, greasy, unctuous mass, that would poison any roots, however gross their feeding powers. In these excessively rich borders the Frontignac and Muscat grapes never succeed well—the foliage is of a yellowish sickly green, the wood long jointed, with weak eyes, the fruit when produced, cracking before maturity. These are stubborn facts, not high colored, to which I could add several others if the confirmation of our position required it. Now sir, for the other side of the picture, (and we will keep under the mark.) We know a vine border of a grapery eighty feet long and sixteen feet wide, that has been made six years. The subsoil is clay, and in rather a low situation. Eighteen inches under the surface there was formed a regular bed, of old bricks, stones and oyster shells, eight or ten inches deep, shelving to a drain, to keep the bottom perfectly dry. The natural soil was a rich, dark loam, to which was added one-quarter street manure, the whole being well incorporated and frequently turned; the border when finished, was one foot higher than the surrounding surface, forming an open, dry, porous soil, twenty inches deep. The vines have uniformly produced great crops, well ripened and colored, consisting of about thirty-five to forty kinds of foreign grapes. The border was never mulched nor covered, in summer or winter. In June and July they had several waterings of liquid manure. On examining the roots they were found to be strong and fibrous, ramifying in every inch of the soil.

There is another grape border ninety feet long and thirty feet wide, that we have carefully observed the past ten years. The substratum to within eighteen inches of the surface is sand and gravel, or gravelly loam, which required no draining; the situation is naturally elevated. A depth of twenty inches to two feet was dug out and replaced with the sod from the walks of the garden and an adjoining field, to which was added one-quarter decomposed leaves and rotten barn-yard manure, mixed only when deposited on the *spot*. The growth and product have been the finest I have seen—Hamburghs weighing over three pounds, and Syrians from six to nine pounds per bunch. The wood is uniformly short jointed, and of a particularly healthy growth. The border has had an annual top-dressing in winter of stable manure—no manure water—and although the establishment has been under the management of four different gardeners in that period, the vines, in crop, character, color and growth, have maintained their peculiar high qualities.

We have never admitted the practice of deep, rich preparations, for the culture of the grape, even of materials well incorporated, though we doubt not that under judicious management, vines will grow vigorously and produce good crops of *half colored*, large fruit; but when the fibre of the loam loses its elasticity, and the manure and carrion are decayed, the whole becomes a sour, unctuous mass, retentive of moisture, through which no roots will permeate, and even the strongest will deaden and decay, as in the cases above

noted; so that what was once a rich, porous, and expensive border, has become entirely unsuited to the growth of the vine. This error has been adopted very unwittingly, from the effervescent recipes of some blue-aproned bragadocio! No sir, we have a climate of our own; let us think for ourselves; let us *Americanise* our handywork, as you have done Landscape Gardening and Architecture, and though we cannot expect the critical approval of some learned plebians, we may at least show that our reflective organs are not diseased.

Give an artificial vine border a dry bottom; if naturally sandy or gravelly that is enough, but if not make it so. Go down two feet, not more, (less will do;) fill in nine to twelve inches of stones, bricks, coal ashes, clinkers, or any such material, inclining the bottom to a point or points from whence there are permanent drains to carry off the moisture—having prepared a compost of four parts sod or loam taken from the surface, (not going deeper than four inches)—one part street manure or sweepings from large towns, and one part thoroughly rotted stable-manure, all well mixed four or six months previous to using it. If oyster shells or charcoal is convenient, a few loads will prove beneficial in keeping open the soil; take fair weather to fill up the border, raising it above the level at least twelve inches. Time will take down much soluble matter amongst the dry material in the bottom, at which the roots will, at their own pleasure, ramble and luxuriate for half a century. Give yearly, a light top-dressing of manure, or use freely in the growing season, liquid manure, or Guano water, till the fruit begins to color, but not later.

We hear some who have never tried it already say, that such a vine border is too poor and too shallow; that the plants will be weak, and the summer suns, will dry them up. To such we reply, friend, you are "verdant"—what is your idea? "A border four feet deep, drained, concreted, bury the whole animal, (silver dollars too,) and asphalt it to keep down the ammonia." Such sir, is the last and newest idea of this electrical age on grape vine borders.

R. Buist.

Philadelphia, Rosedale Nurseries, Jan. 4, 1851.

As the foregoing, from one of the most experienced horticulturists in the country, will probably wake up a rejoinder from the other side, we shall reserve what we have to say on this subject, till the "summing up." Ed.

THE INFLUENCE OF WATER ON VEGETATION.

BY WILLIAM SAUNDERS, BALTIMORE.

If I were asked the question, "What point do you consider of most importance in the management of plants?" I would unhesitatingly answer, the application of water; and I believe the answer would be endorsed by all whose experience and observation makes their opinion worthy of notice. It matters not what soil a plant is growing in—how it is situated with regard to temperature or light; if negligently or unskilfully supplied with moisture, it cannot thrive; and I feel warranted in saying that there are more failures in plant cultivation, occasioned by the improper use of this liquid, than by any other cause.

In treating on matters relating to the cultivation of plants, it is difficult to lay down definite rules that will suit all cases alike; neither will any amount of explanatory information compensate for want of that discriminating knowledge obtained through practice and experience. There is abundant proof of this in the many conflicting opinions given upon the same subject by different persons, opinions which frequently appear diametrical-

ly opposed to each other. This partly arises from the accommodating nature of plants, and the infinite modifications of the various agents by which they are influenced, rendering it extremely improbable for any single observation to be of universal application. A further cause of this diversity of opinion may be found in the lucubrations of those who may be termed speculators in vegetable physiology—"who are apt to draw general conclusions, and raise axioms from every particular they meet with;" and seldom hesitate in promulgating their ideas, and investing their theories, however crude they may be, with all the "pomp and circumstance" of authenticated experiment.

The importance of water to plants, and its influence upon them, may be readily conceived, when it is known to form upwards of one-half of all green vegetable matter, and serves as the means of conveyance for all the nutritive elements required for their food. Mineral ingredients must be in a state of solution, or so minutely divided as to be carried along with water, before they gain admission into the roots of plants. It is also supposed that gaseous elements cannot be absorbed by roots in their æriform state, and are available only when in solution with water.

Seeing that water is not only a most important agent in vegetation, but is one more under subjection than any other, it is evident that by its skilful application we can, to a great extent, regulate and control the growth of plants. It is true, that light, heat and air, are also essential agents, and their co-operation indispensable, but over the first of these we have no control, and the latter are under subjection only in artificial atmospheres; but even in out-of-door culture, in fields and gardens, it is possible by draining and deep cultivation, to modify the injurious effects resulting either from excess or deficiency of water. Our control over this agent enables us to meet extremes in the others. By its withdrawal at certain seasons, and freer application of it in others, we can induce different developments, and hasten or retard their termination at will.

Our possession of this controling influence is practically of most importance in the cultivation of exotics, and the production of fruits and flowers out of their natural seasons. Success in forcing depends chiefly upon the previous preparation of the plants for that purpose; an early and thorough ripening of the previous growth, with a proper period of rest, are absolutely indispensable. This is effected by a gradual withdrawal of water. If we lessen the supply of water to a growing plant, we of course cut off the means whereby nourishment is conveyed into its system. Alkalies and other inorganic substances held in solution, are constantly conveyed to the plant with the water absorbed by the roots, these co-operate with the carbonic acid absorbed by the leaves in forming new constituents of the plant. When water is withheld from the roots this supply of mineral ingredients is cut off; these are then taken from the plant itself, principally from the juices of the leaves, which soon begin to change color, and ultimately fall off; while the substances by which they were upheld are incorporated into woody fibre, or other matters necessary for the structure of the plant. (Liebig.) And "rest in plants is effected in one or two ways; either by a very considerable lowering of temperature, or by a degree of dryness under which vegetation cannot be sustained." (Lindley.)

The inflorescence of plants is increased by a diminished supply of water while the buds are being formed; anything, indeed, that tends to check luxuriance—so long as the plant is in a healthy state, is favorable for the production of flowers. The rudiments of flower buds bear a striking resemblance to leaf buds; they are formed of the same elements, and may be mutually transformed into each other according to circumstances. Most gardeners are aware that an over supply of nourishment has a tendency to promote the development of leaf instead of flower buds. Hence we find fruit trees planted in rich, stimulating soil,

make a large development of leaves and branches without producing any fruit. Taking that familiar flowering plant, the Camellia, as an illustration—during its growth it delights in a free supply of moisture, both in soil and atmosphere; if these conditions are kept up uninterruptedly after the seasonal growth is completed, it will not form flower buds, but immediately start into a second growth. On the other hand, as soon as the young shoots are done growing, let the plant be placed in a dryer atmosphere, and the supply of water to its roots diminished, and almost every bud will be converted into a flower bud.

The ripening of fruit is also accelerated by lessening the supply of water to the roots during this process. This may readily be supposed, seeing that it has the same organic connection with the roots as the flowers and leaves. When in a young, green state, the fruit performs the same functions as the leaves, absorbing carbonic acid and giving off oxygen, thus elaborating matter for itself so long as it remains of a green color. Its principal dependence for nourishment, however, is from the leaves. Fruit formed upon naked branches will rarely ripen to perfection without the assistance of leaves. Its intimate relation and dependence upon the leaves renders it similarly affected by change of circumstances. "One of the most essential of the alterations which occur in fruits during ripening, is the decomposition or dissipation of the water that they attract from the stem. A diminished supply of water will, under equal circumstances, produce an accelerated maturation, because less time will be required to decompose or dissipate this element; and, on the other hand, an excessive supply of water will retard or prevent ripening, in consequence of the longer time required for the same purpose." (Lindley.)

The amount of cold that plants are capable of enduring, depends in a great measure upon the quantity of water contained in their structure. We frequently see plants at one time killed with an amount of frost that in previous occasions did not injure them. The soft, watery, immature points of shoots, are also frequently killed, while the rest of the plant remains uninjured. Mild, moist winters, followed by severe spring frosts, are more injurious to vegetation than those of earlier severity, because in the former case the roots are constantly sucking fluid from the soil and driving it upwards into the system, the whole plant becomes distended with watery particles, and owing to the expansion of water in freezing, the bark is frequently rent asunder, and the plant otherwise injured. Hence the proprirty of inducing early maturity—checking the growth by withdrawing moisture, that the shoots may become less hard and solidified, and enabled to withstand cold; and hence, also, the fact that plants flower and fruit more profusely and withstand the rigors of climate with less injury, on well drained lands, than in those constantly saturated with moisture. A wet soil is truly a cold one. Where there is water, the rays of heat penetrate very slowly; the more water the greater the evaporation, and evaporation always produces cold.

Attention to these facts is of much importance to those having the management of green-house plants during the winter. By a proper preparatory treatment these can be inured to bear a degree or two of frost without injury; and in severe weather it is preferable to allow this falling off of the atmosphere, rather than have recourse to high artificial heat, which is often given to an amount not only useless, but decidedly injurious. I have frequently allowed the thermometer to fall as low as 29° in a house containing not only an average collection of what are usually considered green-house plants, but also many that ordinarily receive hot-house treatment, as *Ixoras*, *Stephanotis*, *Eschynanthus*, *Gardenias*, &c. In a common wooden frame sunk in the earth, with no other protection than that afforded by the glazed sash, and a close canvass cover elevated a few inches from the glass, I have kept Verbenas, Roses, Carnations, &c., together with young plants of lettuces and

that "best of all flowers," the Cauliflower, although a thermometer in their immediate vicinity frequently fell six and eight degrees below zero. These were kept scrupulously dry—"dry as dust," and carefully excluded from clear sun-light for some days after fine weather set in.

As we become more familiar with the natural habits of plants, and knowledge in the science of cultivation increases, it may be expected that a large number of plants which are now considered tender, will prove to be much hardier than is generally supposed. It is a fact that many of the failures in cultivation are caused by a mistaken eagerness to keep plants in an artificial instead of a natural condition. In their native countries, many of the plants we cultivate in our hot-houses, are subjected to extremes of temperature which they cannot endure under ordinary artificial treatment. In Australia, for instance, such plants as *Acacias*, *Bovonias*, *Mimosas*, *Eucalypti*, *Hoveas*, *Myopoviums*, and others, which are generally considered to be more susceptible of cold than these, are found growing and flowering where the night temperature falls many degrees below the freezing point. No doubt this power of resisting cold is attributable to the high, arid temperature to which they had previously been subjected, evaporating and solidifying the juices so as to bring the plant into a state of comparative dryness. It is a very prevalent opinion that all tropical plants should be constantly kept in a state of active vegetation. This opinion is unfounded; for there is no climate in the world without its periodical seasons of excitement and repose, as regular as our summer and winter. A knowledge of the natural climates, soils and stations of the plants we cultivate, is a desideratum of the highest importance. Not only should we be acquainted with the climate and physical condition of the atmosphere in the countries to which they belong, but also the altitude at which they are found. A plant growing upon a bleak mountain side, where it can scarcely find root-hold on the rocky surface, exposed to every change of temperature, must require very different artificial treatment from one located in a valley, luxuriating in the rich depositions of the surrounding elevations, where a free current of air rarely visits it. There is a great want of authentic, practically useful information on this subject.

It is questionable whether we do not, in our aim at what is called high cultivation, sometimes overstep the simple means nature employs for her purposes. The closer we can imitate nature, the more likelihood is there of success; and though there is much in nature that the wisest cannot understand, there is also much that is intelligible to the most illiterate. WILLIAM SAUNDERS, Gardener to Johns Hopkins, Esq.

Clifton Park, Baltimore, Md., Jan. 6, 1851.

Horticultural Societies.

MASS. HORT. SOCIETY.

THE annual meeting of this Society was held in the Library room, at Horticultural Hall, in School-street. About fifty members were present. SAMUEL WALKER, Esq., the President of the Society, on assuming the chair made the following address:

Gentlemen—Laboring together, as many of us have done for nearly a quarter of a century, under, as we trust, the guidance of that all-wise Providence whose works have been our study and delight, we are again called to enter upon the respective duties assigned to us by the Society.

That oneness of purpose and action which has been so characteristic of the members of the several committees, together with their increased knowledge from past experience, and the judicious rules and regulations that they have from time to time adopted for their future action, gives assurance that they will be able satisfactorily to discharge all the duties imposed upon them, notwithstanding the increased exhibitions at the Hall, and the more frequent application for information respecting new fruits, &c., from abroad.

It gives me great pleasure, gentlemen, to state that the purpose for which this Society

was established, has so far, it appears to me, accomplished all that its most sanguine friends expected; still there remains much to be done. The future action of its members will be stimulated by the reminiscence of its founders and benefactors—these will cheer their path, and act as a talisman on their future aspirations, while the history of Mount Auburn will be a record, in all coming time, that the members of this Society, some of whom are now present, were the founders of that "Garden of Graves," and that to its first President, General H. A. S. Dearborn, are the members of this Society, and the public, indebted for the beautiful and chaste arrangement of this, the last resting place of so many of the great and good.

The committee to visit Gardens, and to ascertain as far as possible the best mode of cultivation in the vicinity of Boston, have had every facility afforded them by the courtesy and kindness of the proprietors of all the places they visited. In these examinations they found many things worthy, and much to admire. I would again respectfully recommend this interesting branch of our labors to the fostering care of the Society, and also call its attention again to the noble and interesting subject—Landscape Gardening. For my views more fully on this department, permit me to refer you to the remarks in my last annual address.

The increasing taste for Horticultural pursuits requires prompt and corresponding action to enable us to keep pace with *the times*. The question with us now, is not *what can be done*, but rather *what will be done first* to meet the demands of the community, and the wants of this Society. An Experimental Garden, enlarged and more extended annual exhibitions, under tents, &c., are subjects full of interest, and may well occupy the attention, and hereafter require the deliberate consideration of the Society.

But, gentlemen, a permanent *Temple* of ample dimensions, to meet all the wants of the Society and the wishes of the public, is the first thing which I would suggest for your consideration. Let us obtain a suitable location—a *Home*. For this purpose, let us economise our resources, tax our time and our energies, and if need be, our fortunes, for this desirable consummation of the wishes of our friends, and the founders of this Society; many of them saw only through the vista with the eye of hope; it is our duty and privilege to carry out their designs, and fill up the picture as it once presented itself to the vision of the Lowells, the Storys, the Lymans, the Brimmers the Curtises, the Bradlees and the Princes. Without a hall to exhibit to advantage all the specimens raised by Horticultural efforts, we cannot fully accomplish our highest aim—the dissemination of a knowledge of and love for Horticulture; imbue the public with this, and the emulation that it will create between amateurs, and the competition among cultivators for the market, will be sufficient to fill, in a few years, the largest hall we could desire to possess. Having expressed my views thus frankly, on this subject, permit me to touch upon details, by suggesting whether a hall in every way suited for Horticulture, might not be built and fitted up with reference to its soul-stirring kindred spirit—Music—where the warbling voice and the "Bird Song" might be wafted like the gentle zephyr among the trees, the buds, the blossoms and the flowers, to ravish the ear, while the eye shall be charmed by the gems of lovely spring, or the golden drops and purple hues of gorgeous autumn.

The third number of the *Transactions* and *Proceedings* of the Society, which will complete the first volume, will soon be published. It has been delayed from causes over which the Committee of Publication had no control, and which will be set forth in the introduction of that number. The history of the Society, by General Dearborn, is a document of great interest. The propriety of printing an extra number of copies of this part of the work, for the use of its present members, and for future reference, is respectfully submitted.

The Report of the Finance committee will show the estimated value of the Society's property, together with its income and expenditures. The increased appropriations for premiums and gratuities for the present year, have my cordial approbation.

I cannot close these brief remarks without again congratulating the members of the Society on the success which has followed their united efforts; a continuance of the same spirit of disinterestedness, kindness and mutual esteem, that has attended their action thus far, cannot fail to reward their future labors, and render their ways ways of pleasantness, and their paths paths of peace.

On motion, the report was referred to a special commitee for disposal.

Hon. Marshall P. Wilder, from the Committee on Finance presented their annual report, from which we learn that the total receipts of the Society have been $17,245.03, of which $741 was the receipts of the annual fair, and $10,000 the legacy of the Hon. Theodore Lyman. The cash in hand on the first of January was $231.99. The Lyman legacy has been invested in stock of the Worcester railroad, and in the bonds of the Connecticut River and Passumpsic railroad. The real estate of the Society in School-street is valued at $36,000, and the total property at $53,718.87.

J. S. Cabot, chairman of the Committee on Premiums, recommended a change in that important branch of the Society. The Committee recommend a change in the manner of giving premiums, and an increase in the amount. Among the changes a premium is recommended on Isabella and Diana grapes, of $5 for first quality of each, and $3 for second.

Capt. Josiah Lovett, of Beverly, moved that an additional sum of $50 be placed in the hands of the Distributing Committee, to be

awarded as premiums on vegetables; also that ten copies of Colman's celebrated work on European Agriculture, be procured for distribution as gratuities.

After some discussion touching the true character of the vegetable department of the exhibition the past year—whether they, or the premiums on them, were the most meagre—the motion of Mr. LOVETT was carried, and the report read by Mr. CABOT was ordered to be printed.

Mr. C. M. HOVEY, from the Library Committee, read his report. From it we learn that the Library is in a good condition. The number of books taken out during the past year, is greater than that of any previous. Many works of great value have been added during the year. Many not received have been ordered. The Committee recommend an appropriation of $150 for a still greater increase of books. They also recommend that the twenty copies of Colman's Agriculture, now in the Library, be distributed as gratuities.

A Committee of Arrangements for the ensuing year was appointed, consisting of the following named gentleman: Joseph Breck, (Chairman,) D. Haggerston, Josiah Lovett, 2d, C. M. Hovey, E. Wight, A. McLennon, E. A. Story, A. Bowditch, W. R. Austin, Augustus Parker, P. B. Hovey, Jr., and Otis Johnson.

WORCESTER CO. HORT. SOCIETY.

THE annual meeting of this flourishing Society was held on the first of January. The report of the Committee on Building was so favorably received, that the Association, after some little discussion, resolved *unanimously* that it is expedient to build a Hall upon their lot in Front-street, during the current year. The Building Committee were accordingly requested to procure plans and estimates, and to lay the same before the Society at an adjourned meeting. The arrangement at present contemplated, is to have two stores on the lower floor, and a very large hall in the second story, with ante-rooms, &c., &c.

After some discussion, the gallantry of the Society so far prevailed over their economy that they

"*Voted*, That any lady may hereafter become a member of the Association on payment of the sum of one dollar." It was also

Voted, That (hereafter) the wives of members of the Society shall have free admission to all the Exhibitions.

In consequence of the heavy out-lays, interruptions, &c., attendant upon building, it was

Voted, That no premiums should be awarded the present year—also

Voted, To have but one Exhibition the present year, and to hold that on Cattle Show week,—that is on the 17th, 18th, and 19th of September next.

A letter was received from the President of the Society, J. M. EARLE, who was necessarily absent, declining to be a candidate for re-election.

The following election of officers was made for the year 1851:

President—STEPHEN SALISBURY.

Vice-Presidents—Dr. Wm. Workman, Wm. T. Merrifield, Edmund F. Dixie.

Trustees—Geo. T. Rice, Dr. Samuel Flagg, Samuel H. Colton, Edward Earle, Wm. N. Bickford, Daniel W. Lincoln, Charles Paine, Silas Allen, Shrewsbury; Wm. C. Capron, Uxbridge; Charles Brigham, Grafton.

Librarian—Clarendon Harris.

Treasurer—Frederic W. Paine.

Secretary—Dr. Samuel Flagg.

It is not affirming too much to say in regard to this Society, that it is one of the most prosperous in the country. A great amount of valuable information has been diffused, throughout the community, by means of its exhibitions, and it has exerted an influence within its territorial limits of which the practical results are every where becoming apparent. J. *Worcester, Mass., Jan.* 7, 1851.

MARYLAND HORT. SOCIETY.

A number of our Florists, Gardeners and Amateurs, have recently resuscitated the old Maryland Horticultural Society—and at a meeting held in November, the election for officers resulted as follows:

President—Dr. THOS. EDMONDSON.

Vice-Presidents—Joseph King, Jr., Henry Mankin, Johns Hopkins, Wm. C. Wilson.

Treasurer—Edward Kurtz.

Corresponding Secretary—Dr. Gideon B. Smith.

Recording Secretary—Chas. B. Barry.

Counsellors—Saml. Feast, Jr., John Feast, John J. Frisby, John Toumy, O. A. Gill, James Galloway, Geo. Waesche, E. W. Colburn, Henry Snyder, E. F. Jenkins, James Watt, John Dukehart, L. J. Williamson, Jas. McNeal, Jr. Robert Halliday, Chas. U. Stobie, Wm. Saunders, Zenas Barnum, Wm. Gilmore, Edward Roberts, O. Kemp, James Pentland, Geo. Duncun, Jr., Samuel Sands.

At a subsequent meeting, it was resolved to hold monthly exhibitions of Flowers, Plants, Vegetables, Fruits, &c., commencing in February, to which the members and their families are to be admitted—and in June next, the first grand public Exhibition is to take place. The spirit which has been displayed in the renewal of this Society, gives us the assurance of its success. A large number of members have already signed the constitution, and we think that we can promise an Exhibition in June, which will do credit to our city and state.—*Am. Farmer.*

Foreign and Miscellaneous Notices.

Ice-House Management.—This is a matter of no small importance, yet, how often do we see it treated not only with indifference, but upon the very worst principles possible to ensure its preservation; not one ice-house in fifty is constructed upon correct principles—not one in the same number is managed correctly.

When we consider that damp and heat are the two great agents for thawing, it should be our endeavor to counteract these by every means in our power. To effect this, ventilation must be had recourse to, and non-conducting materials employed in the erection. Of materials, we may observe, that stone is, of all others, the worst; timber and brick are the best. The usual practice of sinking ice-houses to a great depth under the surface is bad; indeed, it has only one redeeming property, which is the convenience of filling from the top. Its disadvantages are, the difficulty of admitting sufficient ventilation to correct the dampness, which, build them as we may, is sure to exist in underground houses; the conduction of heat from the surrounding soil, and the difficulty of effecting sufficient drainage: these very far overbalance the advantages thus offered. Why are the majority of ice-houses, and most cellars during winter, so much warmer than the surrounding atmosphere? Is it not from the heat conducted through their walls from the surrounding soil? Earth is a much better conductor of heat than air, or, in other words, it communicates its heat to other bodies coming in contact with it, much quicker than that element. Hence the necessity of placing between the earth and the ice some slower conductor of heat, and the slowest conductors we have applicable to the case, are timber or air; both also, resist damp, while stone does not, and besides, it is a rapid conductor of heat. Water is also a rapid conductor of heat, and instances have been known where rain water has percolated through the roof of an ice-house, that the temperature within has been raised to 60°. Hence the necessity of keeping such houses perfectly dry, not only at top, but also all throughout, by efficient drainage of the melted ice, and by ventilation to correct the dampness in the atmosphere and walls. Indeed, the walls of an ice-house, to be in a proper condition, should be as dry as those of a dwelling. Ventilation, if properly applied, will, in most cases, effect this, and should it not, the introduction of a few bushels of unslacked lime, occasionally placing it in boxes over the ice, will completely dry the walls without elevating the temperature much, if the ventilators be open at the time.

As air is a much slower conductor of caloric than either earth or water, it might, at first sight be inferred, were ice surrounded by it, that it would be the best of all for securing its keeping; and so it would, if kept in a state of quiescence, but this is impossible, owing to the difference of temperature which will exist in that portion of the air coming in immediate contact with the surface of the ice, whether on the top or around the side of the mass, which will be reduced to a much lower temperature, say nearly 32°, than that in contact with the walls of the house, if sunk under the surface, from its receiving heat by conduction through them, so that it is often found to be as high there as 46° or 47°; this difference of temperature causes circulation to take place, the lighter air ascending upwards, seeking for escape, and becomes replaced with the colder and more weighty. It follows, therefore, that if this circulation could be interrupted, the melting action on the ice would be greatly diminished, and a state of quiescence secured. This appears, however, to be impossible.—*North British Journal of Hort.*

The Pleasures of Gardening.—We know not one fancy, one recreation, so unalloyed in all its points as the cultivation of a garden. It seems to afford, in common with all the rest of the fancies, the full enjoyment common to all, and to have a large balance in its favor. The miser over his treasure gloats not more completely upon his money than the gardener does upon his choice fruits, flowers, and vegetables. The picture collector is not prouder of his painting than the florist is of his Tulips; nor does the owner of the ancient gems of art point them out with more satisfaction, than the gardener shows his best named flowers. If the owner of a gallery of pictures has his Rubens, his Leonardo da Vinci, his Paul Potter, so has the owner of a bed of Tulips. The florist combines in his single garden as many fancies as would occupy half the population, and delights in all of them. What if the conchologist boasts of his collection of shells? He can only look at them in one state; there they are, always alike, no change; only a few people can see them at once, and not one in a thousand, though they may be pleased with the beauty, can estimate the rarity of them. The antiquarian pores over his coins in solitude; he boasts perhaps, that this crown, that guinea, or the other medal, are the only known ones in existence; but can he increase them? Can he oblige a single friend with an offset? Will it ever be better? but, if another be found like it, will it not be worse? What has he rare that the florist may not in his own estimation equal? The Tulip-grower would say, "What coin have you got equal to my fine Louis XVI?" And no possessor of the only coin of a kind, prizes himself more upon his treasure than a florist does in twenty flowers of twenty different families. The lover of the garden is a general collector, and a creator of new beauties into the

bargain; he sows his seed with pleasure, he watches the progress of his plants with interest, he looks for their opening flowers or swelling fruits with anxiety; and if his hopes are crowned by one solitary plant, fruit, or flower, better than his present stock, he is repaid for all his trouble, labor, and watchfulness; if not, he begins again, nothing daunted, saying to himself, "Bad luck now, better another time." Is there any fruit eats so sweet as that from our own garden? Does not every day develope some new claim to our attention? Every new visitor in the form of a flower, or fruit, or vegetable, is a welcome one. A man does not go into his garden, as he must into a gallery of pictures, a cabinet of coins, or a museum of natural history, to see the same things in the same places time after time: he finds something new every day: his beds of Tulips and Ranunculuses, his collections of Picotees, Carnations, and Pinks, his Pansies, Dahlias, Auriculas, Polyanthuses, and other flowers, come in, one after the other, to reward him for his recreation—for, though there be much exertion occasionally required, he will not call it labor. His vegetables and his fruit repay him for the trouble and expense he incurs; and after all, there is one sweetener to all his cares, one refreshing reward for all his anxieties, one circumstance that gives an additional relish to all he personally enjoys, and it is this,—he has not to seek a connoisseur to participate in his happiness, for ask whom he may to see his establishment, all the classes of society are delighted with a well-kept garden. It delights all the senses; its fragrance, its brilliancy, its usefulness, all speak to us in language not to be misunderstood, upon the numerous pleasures and duties which are inseparable. But there is one point of which we must not loose sight,—it is the facility with which every class of society can accommodate his gardening to his means, and yet excel as far as he goes; one cottager, with scarcely more ground outside his house than his house covers, can be king above his neighbors for the growth of Stocks; another prides himself upon his double Larkspurs; a third will allow none to surpass him in Pinks; a fourth will shine in Pansies; and so, according to the means at his disposal, the owner of a garden may be ambitious, successful, and happy.—*Thomas Miller.*

Sulphurating Machine.—Among the many instruments essential to the proper management of a garden, this invention by Mr. Fry promises to be one of the most useful, alike indispensable to the cottager as to the manager of the largest establishment. Through the kindness of a neighbor, we have had an opportunity of trying some experiments with the machine, and we find it admirably adapted for the purpose intended, as well as for fumigating with tobacco. It is manufactured on the principle of Brown's Fumigator, the sulphur being drawn into a box by means of a fan, and distributed through a tube in a continuous cloud. With this instrument, a row of Peas, a score of Heaths, a frame of Cucumbers or Melons, or a house of Vines may be covered with sulphur in a few minutes, and that not in superabundance in one place, and none in another, but it is equally distributed like fine dust, and so as not to be offensively perceptible on the plants. Sulphur, and more especially sulphur vivum—the waste, is very cheap, if bought at the manufactory; and we have reason to believe that the Hop growers of Kent intend to avail themselves of this machine to destroy the mildew upon the Hop plants. It is necessary that the machine as well as the sulphur be perfectly dry when used, or it is liable to clog. For distributing snuff to destroy the Aphis on wall trees, and also for quick lime for the Turnip fly, this machine might be used with advantage.

It is true, we have not been in the habit of using sulphur so extensively in garden management as has been necessary; but now we have got this machine, and know at the same time sulphur sufficient for the supply of a large garden may be purchased for a few shillings, we see no reason, why Peach trees, Peas, and many other crops should be allowed to draw out a miserable existence, when the enemy that kills them can be destroyed by a few puffs of this instrument. One of the best flower gardeners in the country, Mr. Beaton, of Shrubland Park, uses sulphur among his flower beds, as Verbenas, Calceolarias, &c., to destroy the mildew, which upon some kinds, late in the autumn, is very troublesome; and we have no doubt he will regard this machine as a perfect boon to him, as will every other gardener who procures it. With it, all the beds in an ordinary flower garden might be dusted in less than an hour, and without being rendered unsightly, as they must be when sulphur is thrown upon them by the hand.

When used as a fumigator, the tobacco is placed in a vase provided for the purpose, which can be attached to the machine in a few seconds; thus there is no chance of the ignition of the sulphur, or the generation of sulphurous acid gas, which is so destructive to vegetable life, and which is so much dreaded by some gardeners who do not know the machine. In fumigating, this machine discharges the smoke much colder than Brown's instruments, as a portion of cold air is drawn into the tube and mixed with the smoke with each revolution of the fan.

The only fault we have to find with it is, that it is not manufactured sufficiently strong, but when properly made, we doubt not, it will last for a number of years. It can be procured from Mr. Fry, gardener to Mrs. Dent, Manor House, Lee, Kent.—*Gard. Mag. of Botany.*

Hydrangea involucrata var. flore pleno.—All the species of this beautiful genus are welcome in our gardens. Every one knows the Hortensia (Hyd. Hortensia,) the first species introduced to Europe. This elegant shrub was received from China, at the royal garden of Kew, in 1790, and from thence plants were ob-

tained by some French cultivators, by whom it was soon extensively distributed. The plants produced at first only small and few flowers, in consequence of its proper treatment being imperfectly known. But when subsequently they were grown in a peaty soil, and freely supplied with water in the period of their vegetation, they soon assumed a very different appearance, and their real beauty was discovered. This fact alone might teach us to abstain from pronouncing a decided opinion on the merits of a newly introduced plant before the proper method of treating it has been proved by experiment. Many species of the same genus have since then been introduced, but these are not so beautiful as the old one. Their umbels are smaller, and the blossoms are less highly colored; moreover, with the newer sorts, the large unfertile flowers are less numerous than in the old species, the umbels of which are almost compact. This monstrosity is apparently the result of long experimental culture in the Chinese and Japanese gardens, and it is scarcely to be doubted that ultimately the smaller flowers will be made to bloom as large and as profusely as the others. The beautiful species which has called forth these observations, would seem to confirm this supposition. Its unfertile exterior flowers are double, of a bright rose color. According to Siebold, who, however, does not appear to have introduced living plants of it, it grows on the highest mountains of the island of Niphon and Sikok, (Japan,) where it flowers during the months of July and August. It is grown plentifully in the gardens of these parts, and forms a handsome plant, with a stem about three feet high. According to some travellers, there are four varieties of it; one lilac, the others with flesh-colored, yellowish, and rose-colored flowers. The leaves are opposite, rounded at the base, or nearly heart-shaped.—*Van Houtte's Flores des Serres.*

Ammonia in Horticulture.—The labors of modern chemists have shown us, and it is one of their grandest discoveries, that it is the Azote to which manures owe all their value, and that their fertilizing properties are just in proportion to the quantity of this agent they contain. It is not always in its form of a simple body that this gas is useful; it can only be absorbed by plants in combination with hydrogen, that is to say, in the condition of ammonia. It has also been satisfactorily demonstrated that the atmosphere is the grand source or medium from whence vegetables derive this substance. Hence the great utility of cultivated plants being trenched in the soil, especially if these plants are such as easily give off their azote to mix in the atmosphere rather than in the soil. Leguminous plants, for instance, are very suitable in this respect; and long experience rather than the teachings of science, has taught agriculturists to economize the plants of this family, to enrich the ground which has been exhausted by excessive cropping. Chemistry, properly speaking, has not made this discovery, but it has elucidated and justified a practice long in use.

It may be interesting to investigate the causes which perpetually hold in the atmosphere the quantity of ammonia necessary for the development of vegetables, and which repair without ceasing the losses which they sustain. According to the researches of many chemists, and particularly those of M.M. Boussingault and Liebig, these causes are two in number. The one which is the most direct is the decomposition of organized bodies, which, without exception, contain a greater or less quantity of azote. All vegetables contain it, but it is particularly in the bodies of animals that this agent is condensed. It enters extensively into the composition of their organs, and when, after death, these animals are left to the chemical action of nature, all the elements of which they are constituted separate, and immediately form new, and, for the greater part, gaseous compounds, and among others the ammonia, which returns to the atmosphere, where it soon dissolves in the watery vapor with which the air is always charged.

The second productive cause of atmospheric ammonia has been much less studied, and it is only within a few years that its existence has been suspected. It is known to reside in the electric discharges which succeed one another in the air, at least in certain portions of the globe. It is the opinion of Boussingault as well as of the celebrated Liebig, that the carbonate of ammonia must pre-exist in all organised beings. "The phenomenon of the constancy of thunder-storms," says M. Boussingault in his treatise on Rural Economy, "would seem to justify this opinion." It is said, indeed, that every time a series of electric flashes pass in the humid atmosphere, there is a production and combination of nitric acid and ammonia. The nitrate of ammonia, besides, always accompanies the rain which falls in a thunder-storm; but this acid being fixed in its nature cannot be maintained in a state of vapor. When we consider the reactions which take place between the different compounds in question, it may easily be conceived that the nitrate of ammonia, which is drawn to the earth by the rain, and which comes in contact with the rocks or calcareous soil, is afterwards volatilised to the state of carbonate at the next drying of the soil. In such a climate as France, where thunder-storms are rare, we should perhaps scarcely attach so much importance to the electricity of the clouds; but, between the tropics, the electric discharges which take place in the atmosphere are almost incessant, and an observer placed at the equator, if his organ of sound were delicate enough, would hear the peals of thunder continually. There can be no doubt at the present day, that the carbonate of ammonia is the most active agent of vegetation, and without which all the others would be useless; but this carbonate is gaseous, and, for this reason, cannot be employed directly by the cultivator, who, were

he to try to create an atmosphere of the carbonate of ammonia under his ground, would spend a great deal of money without obtaining any benefit whatever, since the slightest movement of the air would instantly produce evaporation of this volatile manure." It is fortunate then, that so useful an agent can be insured for the purposes of horticulture wherever a quantity of the air can be isolated from the air outside; yet it is somewhat singular that its use, now attracting attention, in the cultivation of plants in the green-house, stove, pit and frame, has not been thought of sooner.—*Revue Horticole.*

Vase, or en Gobelet mode of training fruit-trees.—In the gardens of the Luxembourg, at Paris, all the quarters containing fruit-trees are surrounded with borders, planted with cherry, plum, and apricot trees, as standards; and some with excellent effect are trained in form of a *Vase* or *en Gobelet*, dwarf, or with a stem five feet or rather more in height. The head is formed hollow, in shape like a goblet, the shoots being annually tied to hoops of wood, adapted to the circumference required to give the desired form. Two hoops are sufficient, the two-year old wood being tied to one; and the equidistant regulation of the one-year old shoots is effected upon the other. As the *vase* or *goblet* widens, of course hoops of greater circuit must be prepared, either of new materials, or introducing an additional piece. In some instances the hoops were formed of round, apparently a quarter of an inch, iron rods; but wood is preferable to iron, for vegetation in contact with the latter is apt to be injuriously affected by the rapidity with which it heats and cools. Shoots are apt to spring up in the center of the goblet; but they must be pinched in summer; and so all other irregularities of growth appear likewise to have been. The form is very ornamental; it can be produced at little expense; and the trees were well furnished with fruit buds. Suppose a tree to have six shoots, let them be tied at equal distances to a hoop placed horizontally, and then shortened a few inches above it, or so as to leave them a foot or more in length. From each of these, two shoots may be trained to the outside of a somewhat wider hoop in the following season; and thus by annually introducing hoops of a width proportionately corresponding with the respective diameters of the vase intended to be imitated, the desired form will ultimately be produced. The head of the tree will be completely balanced; and the branches will be more nearly equidistant than they could be by any other mode of training as a standard. I should prefer wooden hoops to iron ones. If weak, or if two or more pieces must be employed for the hoop, its circular form may be preserved by two small rods, secured diametrically across it. *R. Thompson, in Jour. Hort. Soc.*

White Transparent Carrot.—The permanence of certain types of plants, commonly classed among esculents, is too generally believed. This exaggerated, not to say erroneous, opinion has been prejudicial to all attempts to improve particular vegetables. In the carrot, for instance, the variety having a white skin would seem to have been condemned for ever; except, perhaps, the white carrot of Breteuil. Yet it is clear that we do not know the innumerable atmospheric influences, as well as those which relate to situation and soil; all which may considerably ameliorate or improve the types of our commonest vegetables. With this view M. Barthel, Sen., of Mulhouse, has lately succeeded in raising a very interesting novelty in the form of a white transparent carrot. It only resembles the other white varieties in size. It is distinguished by its roots being of moderate length, its earliness, and especially by having the appearance of pure white wax overlaid with a coating of shining varnish. Its leaves are short, finely cut, the collar (formed by the stalks of the leaves) is slender and inserted in a deep cavity. In point of flavor it comes near the red varieties, a circumstance that will render the transition between the red and those commonly called white, more natural.—*Revue Hort.*

Vine Borders.—I imagine it will be found on trial, under certain conditions, that the most economical and convenient situation for the roots to ramble in, is the ground-floor of the structure in which the vines are grown. And now for the "conditions:" heat is indispensable; but it must be applied to the surface, and not under the roots; concrete in any shape is not required; neither is it requisite that the borders should rest on paving stones, supported by walls of masonry. By applying heat to the surface, this is rendered unnecessary. With me the roots penetrate through bricks and mortar, in order to obtain heat, and with heat I could lead them any where; therefore there need be no fear of their descending into unfavorable soil; deep and rich borders must be avoided; as must also carrion or other nostrums of the day; the natural soil of the Vine should be imitated as far as is practicable; and tepid soft water, and clear liquid manure, applied freely, when necessary. For supplying heat, leaves or tan answer very well; and if hot water or hot air is used, then all may be covered permanently with gravel, or anything most convenient, for the border will never afterwards want to be disturbed. Something similar to what I have attempted to describe has been in practice for the last 16 or 18 years; and the plan has produced fine crops every year, and at all seasons of the year; two crops of grapes could easily be taken from the same vines in one year; but for permanent vines, that should not be put into practice.—*Gard. Chron.*

Domestic Notices.

Our Frontispiece.—We present our readers, this month, with a perspective view and ground plan of a barn and stable designed for the villa residence of a gentleman on the Hudson, whose whole establishment will be remarkable for the completeness, convenience, and good effect of the various buildings, joined to much natural beauty of features of the locality in which they are placed.

This stable, is intended to produce a picturesque effect externally, and to contain internally all the convenience demanded in a building of this class. The central portion contains the carriage-house, with space for four vehicles, and a harness-room at the end of it. On one side of this is the stable—the stalls 5½ feet wide, with racks supplied with hay through wells, over each rack, in the floor of the hay-loft above. A flight of stairs leads from the end of the stable to the hay-loft above, and is placed here, (and not in the carriage-house as we frequently see it,) in order to prevent any dust from the hay-loft from finding its way into the carriage-house. On the other side of the carraige-house are a tool-house and work-shop.

All the doors in this stable slide upon iron rollers running upon a piece of plain bar iron above the door. These iron rollers are attached firmly to the door by iron straps, and the door, being thus suspended, not only runs much more easily and freely than if the track were at the bottom, as is usually the case, but the track is not liable to get clogged by dust or other matters falling upon the floor. Besides this, a sliding door in a stable, when opened, gives the largest possible egress in a given space, and can never stand in the way to the injury of horses or carriages passing in or out on either side.

The high-roof of this building gives a good deal of room in the hay loft, and the ventilation on the top keeps this space cool and airy at all seasons. The whole is built of wood, the vertical boarding battened in the ordinary manner.

Suburban Embellishments.—We learn, with much pleasure, that an extensive and beautiful improvement is about to be carried out in the environs of Rochester, N. Y., by building up a part of the suburbs of that city so as to combine the greatest amount of comfort, health and beauty, possible. A suitable piece of land has been selected; in the center of this, a park of 60 acres is to be laid out and planted in the best manner, and around this are to be located the various cottages and villas of the shareholders in this enterprise—not with a few paltry feet of frontage, but with space enough to give each residence those accessories of trees, shrubs and grounds, that bestow an air of rural beauty upon such a residence, and make the owner feel that he has a home, even if it is in the midst of a city. The project is one that pleases us much, and we shall look forward to its faithful execution as something likely to have an influence on the taste of the country. We, Americans, lay out and build our cities generally, as though there was a fearful scarcity of space for the future destinies of the race on this western continent.

Habits of the Wild Grape.—I wish to avail myself of the subscriber's privilege, and make one or two inquiries in relation to grape vines. Six or seven years ago I took half a dozen cuttings from the vine of a native white grape, in another garden, and planted them in my own garden; three out of four of them that lived, when they were three years old, produced an abundance of flowers, but did not set a single grape, and although they would blossom every year, they never bore any grapes; the other one began to blossom when the others did, and has always borne a good crop of grapes. Now I wish to inquire if cuttings taken from one individual vine, as I think mine were, will produce vines, some of which will be sterile or barren, and others fertile and producive; if so, then, how can I select cuttings from a vine that will be sure to be productive?

I have thought that a cutting taken from the base of a cane of vine of this year's growth, might, in some cases, produce a productive vine, while another cutting taken from the top of the same cutting, might produce a sterile vine, yet I can hardly think so; it would seem to beat the strawberry in that case. What do

you think of it? "Class-Book of Botany" by A. Wood, says, "*V. labrucsa*, like most of the North American species, flowers are diœcious." Prof. Gray, in "Botany of Northern United States," says, "Flowers—polygamous in all the American species." Wm. Bartram, in a paper in the "Domestic Encyclopedia," by A. F. M. Willich, says, "All that I have observed in the northern and eastern United States are *polygamous*," yet seems to think that Walter might have been right in classing the "*bull-grape*" of Carolina as diœcious. If the grapevine is polygamous, and I have no doubt it is, then *perhaps* it might *sport* as I have specified above, but if it is diœcious, then that is the end of the subject, if I understand the terms aright, and I must have taken the cuttings from two separate vines. Abiel Chandler. *Concord, N. H., Dec.* 1, 1850.

Remarks—The Scuppernong grape of Carolina is *diœcious*—but all the other native sorts so far as we know are polygamous. It cannot be denied, however, that our native grapes occasionally take an infertile or barren habit—none of the blossoms setting fruit, perhaps from an imperfection in stamens or pistils. If you propagate from a fruitful plant however, you rarely or ever fail in getting fruitful results from the cuttings or grafts. Ed.

Camellias—Last fall I purchased the following Camellias, viz: Wilderii, Eclipse, Chandlerii, Mrs. Abbey Wilder, Double White, Double Striped, Hempsteadii, Duchess de Orleans. They were well set with flower-buds, and looked thrifty. I had one fine flower, a Double White, but soon faded; the remaining buds grew to about half an inch long and then dropped off. There was one on Wilderii that partly opened, and then dropped off. Wilderii made a growth at the same time of about three inches. The remaining six went in the same way. I kept them free from dust; kept them moist; also kept the atmosphere as moist as I could, by placing a flat pan on the top of my stove, and kept water in it all the time. (I burn wood.) I had a table made with a sink to it, and kept water in that also, over which I set my plants. The thermometer has stood from 60° to 70°, and never fallen below 45°. I have used rain water on them. What must be done to secure good blossoms another season? Please answer the above next month, in your valuable Journal, and it will confer a great favor on an old subscriber. M. E. Irwin. *Southbridge, Jan.* 7, 1851.

The Camellia likes plenty of fresh air, and plenty of fresh air is a thing not often seen in a room that is heated by a stove to 60° or 70°. The buds probably fell from the effects of the vitiated air. If you *must* use a stove, and wish healthy plants, you must enclose a space with glass, making a sort of double window, large enough to hold your plants. It should have a window opening into the room, and which can be shut at times to keep out its excessive heat. The crevices in the outside window, will let in air, and thus your little plant cabinet can be regulated in temperature, &c., so as to promote growth and bloom much more readily than when the plants are in the room itself. Ed.

Importation and Exportation of Fruit.—Pears are now selling at John Tayler's, (confectioner,) in Broadway, New-York, which were imported by the steamer from France. They are labelled *Bon Chretien* and *Poire de Libra*. They are not of very good quality, and may be the Spanish *Bon Chretien* and common Pound Pear. They are sold on the counter at 12½ cents each. They came packed in straw, and were fourteen days on the passage. I was told that a "good many" decayed, and there was not much made by the speculation.

If our home supply of winter pears should ever exceed the home demand, there will be no doubt of the practicability of exporting them. But very few persons will pay 12½ cents here for any sort of pear, and then only for a short time, when there might be a scarcity of any fresh fruit. But it is a standing retail price in England, at which large quantities may be sold. The usual quotation for pears in the Covent Garden Market Report, in winter, is "4 to 12*s. a dozen*"—that is $1 to $3. I saw pears, (*Louise Bonne of Jersey, Duchesse d'Angouleme*, and *Glout Morceau*,) brought from France, selling in Edinburgh and Glasgow, first of October, 1850, at 6*d*—(12½ cts.) each. At the same time and places, the price of peaches was 3*s* to 4*s* a pound—6 to 8 cents each. They were of what we should call in New-York, middling size and quality. Apples at the same time were

4 to 8 cents a pound—small Ribstone Pippins 4 cents each, small nectarines, (very poor,) 4 cents each. Yours. O. Southside. *Staten-Island, Jan.*, 1851.

Construction of Vineries.—The increase of glass structures for growing the foreign grape, has been very great within the last three years—especially in the suburbs of our three largest cities. Now that it is prettey well settled that the foreign grape cannot be relied on out of doors, and that it will always ripen perfectly with the mere shelter of glass, unaided by fire heat, almost every amateur who can afford it, is attempting the production of this delicious fruit under glass. The market gardeners are not behind-hand in the matter, and the markets of New-York, Boston and Philadelphia, are now supplied with Black Hamburghs and Muscats of as fine quality, and at lower prices than in London; and it is not impossible that they may soon become as cheap as in Paris. If some of our manufacturers, who use steam power, knew how to apply their waste steam to the warming of forcing houses, we might have an abundance of grapes in our market two or three months earlier than they usually ripen in cold vineries.

We shall soon give, perhaps in our next No., some further plans and details for the construction of vineries of moderate size.

Bees—Queries.—There is a subject connected with Horticulture that you do not treat of—the Honey Bee. The directions in the Treatises on Bee Culture, for making artificial swarms, I have not as yet been able to carry out in practice.

First. Can you or any of your correspondents, say from *experience*, whether a Queen can be raised from a worker egg or larva?

Second. Will merely closing the passage from one part of the hive to another, at the proper season, cause them to raise a queen in that portion which has none, (as some assert,) or is it necessary that the part containing the queen should be removed?

Third. If it is necessary to remove that part of the hive, how can it be ascertained, (for here is the practical difficulty,) which part contains the queen?

I have kept bees for several years, and have watched them at their labors with much interest, both by day and by night. I have seen them making comb at mid-night, and even later, but have never yet been able to increase my stock, as it is not easy to hive a swarm in a city.

One thing is certain, they pertinaciously adhere to their old plan of working, and cannot be made to comprehend the value of any improvement in a hive, that interferes with their ancient usages, however much it may be lauded by the inventor.

In your last number is an article on grape-vines, in which grafting is mentioned. In what way can that be done?

The bleeding of the vine in the spring is such an obstacle as to prevent its success with me. On one occasion a piece of India-rubber was tied around a cut, and seemed effectual at first, but the sap after a time stretched it to the size of a hen's egg, and then burst it.

Verbenas.—Last fall I planted a number of newly rooted plants in a glass-house without any fire heat. The plants are well sheltered from the heat of the sun and from cold, by dead stalks cut from the garden. It has frozen very hard in the house a number of times, yet the Verbenas look well, and are in a growing state.

Sicily Sumac is an article largely used, and worth double the price of American Sumac. Would it not be worth raising as a crop on poor or rocky land, that is worth but little for other purposes? A Subscriber. *Philidelphia, Jan.* 6, 1851.

Answers—As we know very little of the treatment of bees, we must beg some of our correspondents to reply to that portion of our correspondent's inquiries.

Grafting the vine is easily performed in the usual cleft manner, (i. e., by splitting the stock and inserting the bottom of the scion as a wedge)—but the scions should be cut in winter or early spring, and kept in the cellar, in damp earth, till the buds, on the stock to be grafted, are bursting; then graft, and cover the wound with grafting clay. If the stock to be grafted can be cut off below the surface of the graft, the grafts can be inserted at any time during the grafting season—say middle of March to middle of April, about Philadelphia. In this

case no grafting clay will be needed, the soil being drawn completely about the scion.

Freshly burned plaster—such as is used by builders in making hard-finished walls—is the best thing to stop the bleeding of vines—but unless a very large limb has been cut off, we do not look upon bleeding as doing any harm whatever. Ed.

Ohio mineral Paint.—We have been a little skeptical about the advantage claimed for this paint, or at least have felt that time was needed before any satisfactory judgment could be passed upon it. We have much pleasure however in bearing witness to an instance of its excellence lately, as a surface covering for metal roofs, and its superiority to the paints in common use for that purpose. We saw the roof of a building covered with tin, and used for a purpose peculiarly calculated to try any material of this sort, since it is constantly exposed to great variations of temperature—tho space under it being alternately heated and and cooled—thus expanding and contracting the metal beyond what is usually the case in our severe climate. The proprietor had tried various modes of making it tight without success, but finally covered with two coats of Blake's Paint. This was done two years ago, and since that time it has never given the least trouble. Decayed and defective gutters first lined with muslin, and then thoroughly painted with it at the same time, have also remained perfectly water-tight. A single coat—as often used is not sufficient—two coats are necessary to answer the purpose, and three coats make a strong and lasting coat of cement, unalterable by sun or rain.

Quinces on Thorns.—Some of the most beautiful Quinces we have seen the past autumn, were grown upon the common white thorn, so abundant in many of the fields in the country, that they seem quite a nuisance. There is no mistake in the matter, for we saw the same quinces just after they had formed, and watched them every time we passed that way, (which was often enough,) till their maturity, when they were large, fair, possessed of the golden beauty and veritable odor of the Quince. Their taste, too, was that of the Quince, and they could be nothing else.

The trees on which they grew were very beautiful, the stocks being from $\frac{7}{8}$ of an inch to $1\frac{1}{2}$ inches in diameter, and grafted about two feet from the ground. The grafts were from two to four feet in length, and were borne down with rich golden fruit.

The advantages of raising Quinces on thorns, are that they assume more of the character of trees, than Quince bushes will do without frequent pruning. Second, the stocks are hardy, being natives of our poorest and most exposed soils. Third, they are not subject to the borer and other insects, as the Quince has proved itself to be. There are thousands of thorn bushes in our county, which are now only eye-sores to the beholder, and nuisances to the landholder, which by grafting in this way may become objects of great beauty, and highly productive value. W. Bacon. *Richmond, Mass. Jan.* 7, 1851.

Stoves and Ventilation.—Mr. Downing's leader, in the Nov. number of the Horticulturist, "The Favorite Poison of America," is however, the article which is most attractive, as most coincident with my own notions: for it I feel constrained to extend a hand across lake and mountain, to give him the grip of fellowship. You are right, Mr. Downing—wage war on the stoves. Oh, that we had some chivalrous Knight, armed with battle-ax and mace, ready to march across every valley and hill of the country, through every street and alley of our cities, destroying, as he went, those villainous stoves, the Demons of the Castle of Hypochondriasis, as good old John Bunyan would probably have called them, had he lived in this degenerate age of pale faces and hot stove rooms. With such a destroying champion of our cause abroad, ah, what music would resound in our ears, from kitchin and cellar, from parlor and chamber, as the stalwart blows fell upon "air-tight" and "ten-plate," cooking-stove, coal-range and furnace! Who would not sue for the honor of Knight-erranty in such a cause, and believe that he could still do his country some good service under such a leader!

In serious truth, we fear the worst effects from the deleterious influences pointed out by Mr, Downing. It is a growing evil, far more serious in the Eastern States than we in the West can well imagine. In my visits to an eastern city, the loss of the open fires is everywhere oppressively felt—furnaces, furnaces, nothing but furnaces—no bright, cheerful fires to enliven the scene—all dull and gloomy, exhausted and exhausting, reminding one of something as different as possible from what you gardeners call a *damp stove*—I believe—a something, the existence of which is problematical, and which, for vegetation, would probably be nonsensical—

a *dry stove*—which I sincerely hope is not yet invented, except to hatch chickens.

In the parlors of my eastern friends, there were elegant pictures and beautiful flowers, and devoted lovers of these specimens of the fine arts; but they had discarded that which is far more beautiful than pictures or flowers, the bright, breathing, sparkling, crackling, *open wood fire*. What picture, by Rubens or Guido, can equal it in its colors? what flower, not even the Victoria regia, can compare with its life and varying change? Still, amid all the dry heat that every where prevailed, there was one dear old lady, who was not to be turned, e'en by fashion's irresistible force, from the gratification of her more refined and less highly *educated* taste, but who kept the old open wood fire, with straight sticks, of dry hickory, the picture of old fashioned neatness and comfort, the hearth neatly swept, and the andirons with their brass balls burnished as brightly as though they were representing the satellites of Jupiter. Alas! where now are those nice brasses?—banished from the parlor. I loved this old lady for her quaint persistance in the olden ways—it struck a chord of sympathy in my own heart, which vibrates afresh as I sit here now, in front of a blazing fire. The frost has wrapped all nature, without, in his cerements of death; the wind sings his mournful requiem of summer gone, and the very fallen leaves rustle as they drift closer and closer together in the shelter of some little shrub in every sheltered nook; but within, all is cheerful and gay—the fire crackles and rejoices, and the cricket on the hearth comes forth with his merry and contented notes. *Hearths, too;* what are to become of them and their genial associations of social ties and social joys! are they all to be swept away? and for what? What new happiness have you with which to replace them? When far away from home, where does fancy picture dear ones?—surely around the blazing fire. When memory calls up scenes of early childhood, are they not of the same place, whence we looked up into the faces of dear parents? Yes, the recollections of boyhood and manhood are all connected most pleasantly together at this spot, and the hearth-stone becomes sacred to us all—we love it, we cherish it, and, if needs be, we would fight for it.

Good friends, in earnest truth, beware how you cast from you one single source of happiness, one single cause of joy. We have too little of either in this weary life of disappointments, to be reckless of the one or of the other. Economy and neat housekeeping are most excellent good things, and much to be desired; but the pleasures of a refining joy and the joyousness of pure air and consequent good health are infinitely more to be treasured. Then beat down your stoves, brighten up your cheerful hearth-stones, and you will find within your own family circle a well-spring of constant happiness.—*West. Hort. Review.*

Analysis of the Peach.—According to promise, I send you for publication, an analysis of the ashes of three of our most valuable sorts of the Peach, viz: of the Yellow Rareripe, Morris Red Rareripe and Morrisania Pound. I took about equal quantities of limbs and twigs of these three kinds, from healthy trees, burned them carefully and with a moderate heat, having first thoroughly dried them. They lost in drying about 44 per cent of their weight, of water. The branches when dried yielded about one-thirty-sixth part of their weight, in ashes.

115 grains of Ash	gave of Charcoal and Sand	3.180
do	of Silica	1.480
do	of peroxide of Iron	930
do	of peroxide of Manganese	800
do	of Lime	31.080
do	of Magnesia	7.052
do	of Potash	12.545
do	of Soda	2.277
do	of Phosphoric Acid	16.752
do	of Sulphuric do.	1.320
do	of Chlorine	422
do	of Carbonic Acid	33.350
		111.188

The above are the results separately as found by analysis, with a loss of three grains and about eight-tenths of a grain, to be added to the above to make up the 115 grains, thus—

	111.188
Loss,	3.812
	115.000

It is most useful to unite several of these constituents in their combining proportions, the Chlorine to its proportion of Sodium; the Lime to its Phosphoric acid; Sulphuric acid and Peroxide of Iron. The numbers will then be arranged thus:—

Charcoal and Sand	3.180
Silica	1.480
Perphosphate of Iron	2.174
Potash	12.545
Soda	2.000
Sulphate of Lime	2.258
Lime	23.951
Phosphate of Lime	21.699
Magnesia	7.052
Peroxide of Manganese	800
Chloride of Sodium	699
Carbonic Acid	33.350
	111.188
Loss in analysis	3.812
	115.000

The peach trees grew on a lime-stone soil, that had been but little tilled, and had been well manured. These facts may account for the abundance of Lime in their composition. Analysis shows that even the wood of our fine fruits, for instance, the Pear, Peach, Apple and Grapevine, contain a much larger amount of Phosphates, than do our forest and ornamental trees. The Peach comes next to the Pear in this respect. Truly yours, B. Kirtland. *Poland, Ohio, Dec.* 14. To Prof. Kirtland.

Horticultural Exhibition at Salem, Mass. Sept. 1850—The hall was beautifully decorated,

the committee being assisted in this portion of their duties by the refined taste of the ladies who so kindly volunteered their aid on this occasion. The large and elegant evergreen arbor opposite the entrance, formed a very conspicuous object, presenting a great variety of wild flowers tastefully grouped together; and supported by two immense cornucopiæ, pouring forth their abundant treasures—the one, of vegetable productions, and the other of fruits in great variety. Over the center door was a tablet containing the name of POMONA, surrounded with a rich border of fruits. The eastern door was surmounted with a similar tablet, containing the name of CERES, with a chaste wreathing of grains and grasses; while FLORA occupied a similar position over the western door, decked with a gorgeous array of flowers. Other decorations adorned the windows, and bouquets and vases of flowers in abundance were arranged on the tables, and around the hall.

Among the curiosities that attracted much attention, were pears from the original Endicott pear tree in Danvers, which tradition says was planted in 1630; some fine looking Orange pears, from a tree two hundred and ten years old on the estate of Capt. William Allen, in Hardy street; also, apples from a tree planted by Peregrine White, the first male child born in New England, on the farm originally settled and subdued by him in Marshfield. The farm is now occupied and owned by his direct descendants, by one of whom, Miss Sybil White, the apples were sent to Dr. Merriam, of Topsfield. These relics of past ages are yet productive, and their fruits of no little curiosity.

The display of Fruit was very fine, especially that of Pears, which, for their variety, beauty, and perfection may well challenge comparison with any similar exhibition of this season. Two thousand dishes or baskets of fruit were placed upon the tables, consisting, as will appear from the list, of six hundred and seventy varieties, viz: of Pears, two hundred and ninety with names, eight seedlings and twenty-nine unknown—total, three hundred and twenty-seven; of Apples, one hundred and fifty-one with names, seven seedlings, and twenty-three unknown—total, one hundred and eighty-one; of Peaches, forty with names, thirty-four seedlings, eight unknown—total, eighty-two; of Plums, nineteen with names, three seedlings, one unknown—twenty-three; of Grapes, thirty-three with names, eight native seedlings—total, forty-one; of Quinces, Nectarines, Figs, and Melons, three each; of Oranges, Lemons, European Walnuts, and Cornelian Cherries, one each.

The specimen flowers were arranged on stands which occupied the center of the hall, and comprised a goodly array of Dahlias, Roses, Asters, &c. The Dahlias were the most prominent in their variety and the gorgeousness of the flowers. A stand from Lawrence, brought in on the second day, contained the finest specimens in the hall. The Rose, which, with its hybrid Perpetuals, Noisettes, and Bourbons, is beginning to extend the season of its lovely and fragrant blooms during the autumnal months, was well represented. The Asters, Stocks, and Coxcombs were also conspicuous. A stand of Pansies, and also a stand of Phloxes, Antirrhinum in varieties, Œnothera, Aconitum, Gaillardia, Tradescantia, Trollius, &c., added much to the interest of the exhibition.

A few pot plants were placed on the platform in front of the arbor, consisting of Achimenes, Gloxinias, Fuchsias, &c., whose showy and splendid flowers formed a striking contrast with the native denizens of our fields and meadows, grouped in the rear.

The vegetables, &c. were arranged in the anterooms. The display, although not large, was very interesting, and consisted of fine specimens of Squashes, Potatoes, Onions, &c. In this department were placed the Cereals—as varieties of Corn, Wheat, &c. The cultivation of the last named grain is said by the gentlemen who exhibited specimens, to have been successful; and it is greatly to be desired that further experiments should be tried by our agriculturists, to test fully the advantage of its more general introduction.—*Report of Com.*

Answers to Correspondents.

CAMELLIAS.—*D. B. Williams.* Procure the following ten sorts: Double White, Double variegated, Eclipse, Wilderii, Elegans, Duchess of Orleans, Imbricata, Sacco nova, Mrs. Abbey Wilder, Dunlap's Americana. You can procure young stocks for inarching of any of the large Camellia growers about New-York or Philadelphia.

TREE SEEDS.—*G. C. Merrifield,* (Mishawaka, Ia.) Seeds of Pines, Hemlock, and most other coniferous trees, should be gathered in autumn; but many of them do not drop the seeds from the cones till spring, and may therefore be gathered soon. If the cones will not open readily, lay them before the fire for an hour or two. Mix the seeds with sand, if you cannot plant them at once. As soon as the spring opens, make a bed on the north side of a fence, where it will be shaded the greatest part of the day; the bed should be composed of one-third sand, one-third good loam and one-third light leaf mould from the woods. Plant the seeds in drills, and cover the bed with a little old spent tan or leaf mould to keep it light and moist. Besides that, it should be watered regularly every evening in dry summer weather,

to prevent the young seedlings from dying off. We think it doubtful if you could procure these tree seeds now: the only dealers that we know are Buist of Philadelphia and Thorburn of N. Y., and as they collect native seeds chiefly for exportation, they usually ship all they have before this time. Foreign evergreen tree seeds are not, to our knowledge, kept for sale here.

Roses.—*W. C. B.*, (Buffalo.) You will find Malmaison, Solfaterre, Devoniensis and Chromatella, free bloomers in winter, if you give them plenty of room, and allow them to make long shoots. Water with liquid manure occasionally when they are in full growth. *S. C. M.* The best rose for stocks is Rosa Mannetti, and if you cannot get this, use the common Boursault, (climber;) both these grow readily from cuttings.

Cuttings.—*D. R. K.*, (Roxboro', Pa.) To propagate the Arbor-vitea from cuttings, sink a square or oblong frame fitted with lights like a hot-bed, on the shady side of a fence or building. Take out the soil for 6 inches. Fill up its place with a mixture of fine sand and good garden soil, one-fourth of the latter to three-fourths of the former; make the cuttings of the arbor-vitea in the usual way—about 4 or 5 inches long—cutting off the bottom of each, square and smooth. Plant the frame full of these cuttings—about 2 inches apart, and press or pack the earth as *firmly as possible* about the cuttings. Water them, and put the glass on the frame. This should be done in April, and the watering must be kept up all the season—the lights being taken off at sunset and put on an hour after sunrise every day. The evergreen *Euonymus* will grow very readily from cuttings planted in a shaded place, or in a pot placed in a frame or green-house.

Manure.—*A. P.*, (Baltimore.) If your ground is free from frost, dig in a heavy dressing of the fresh stable manure—the more litter the better—all the gasses will be taken up by the soil, which will also be made much lighter by it. *An Enquirer*, (Cleveland, O.) Coal ashes are very valuable on heavy soils, aiding mechanically, making them lighter. They are also good manure for some things, viz: Indian corn, cherry trees, and grapevines, and should never be thrown away as useless. *Thomas Bell.* Lime ashes—the residuum of lime-kilns burned with wood—are much cheaper and far better manure for your fruit garden than the pure lime—because they contain potash also.

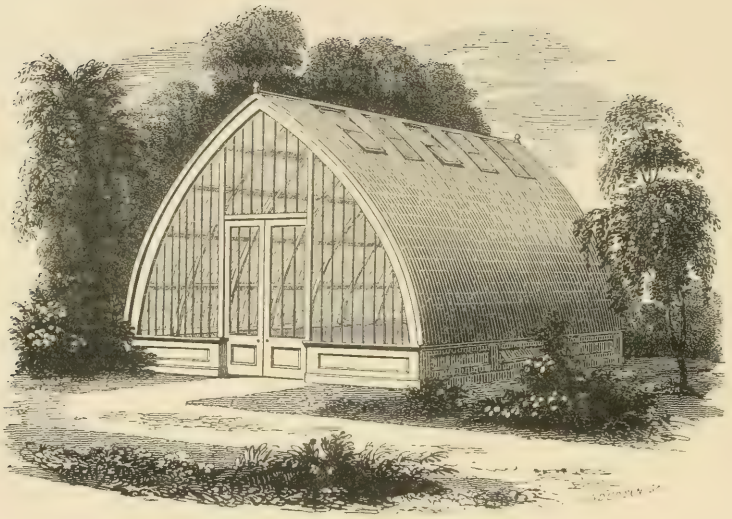
Grapes.—*W. Riggs*, (New-York.) Neither the Ohio nor the Herbemont, are equal to the Elsingburgh as table grapes in the climate of New-York. The Isabella is a better grape here than in Ohio; the Catawba, except in the warmer parts of New York, not quite so good. The latter is the only profitable wine grape yet tested in the United States.

Fire Blight.—*W. Ashley.* We cannot give you any newer light as to the theory of this disease than you will find in our former pages. There is, doubtless, more speculation than wisdom in the books on this subject. There can be but little dispute, however, that one way or other pears trees (at least the improved sorts,) are more susceptible to great atmospheric changes than other hardy fruits. The remedy is to shield the most vulnerable points from excessive heat or cold. Mulch the ground, and sheath the stems—whenever they are not sheltered by the leaves, with straw. This—so far as we have observed—works well in preserving the trees in sound health.

Arboriculture.—*A Trenton Subscriber.* The tree you describe, is the Georgia Bark—*Pinckneya pubens*—one of the most beautiful and least cultivated of all our southern trees. The only fine specimen we ever saw, cultivated, was one in the old nursery grounds, (now we think destroyed,) of the Messrs. Landreth, Philadelphia. It was about 18 or 20 feet high, and very beautiful, in its large bracts or blossoms. It will not stand in New-England, but should do so with you, and is worthy of your attention.

Bulbs in Winter.—*Emily.* The water need not be changed oftener than twice aweek. Do not take the roots out of the glass—but raise the bulb slightly and pour the water off. A small pinch of salt added to the water every other time, will augment the vigor and give fine color to the plants; but be careful that the pinch is very small.

Verbenas.—*Tyro*, (New-London, Ct.) If you find difficulty in wintering these in your cool house, keep them *dry*—just moist enough to maintain verdure during the cold weather. They will bear quite severe frost with this treatment—while if kept watered and growing in the usual way, they perish and damp off with a little cold.



The Vinery at Medary, near Philadelphia.

THE

Horticulturist,

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

The Management of large Country Places.

COUNTRY places that may properly be called ornamental, are increasing so fast, especially in the neighborhood of the large cities, that a word or two more, touching their treatment, will not be looked upon as out of place here.

All our country residences may readily be divided into two classes. The first and largest class, is the suburban place of from five to twenty or thirty acres; the second is the country-seat, properly so called, which consists of from 30 to 500 or more acres.

In all suburban residences, from the limited extent of ground, and the desire to get the utmost beauty from it, the whole, or at least a large part of the ornamental portion, must be considered only as pleasure-grounds—a term used to denote a garden scene, consisting of trees, shrubs and flowers, generally upon a basis of lawn, laid out with walks in different styles, and kept in the highest order. The aim in this kind of residence, is to produce the greatest possible variety within a given space, and to attain the utmost beauty of gardening as an *art*, by the highest keeping and culture which the means of the proprietor will permit.

Of this kind of pleasure-ground residence, we have numberless excellent examples—and perhaps nowhere more admirable specimens than in the neighborhood of Boston. Both in design and execution, these little places will, at the present moment, bear very favorable comparison with many in older countries. The practical management of such places is also very well understood, and they need no especial mention in these remarks.

But in the larger country places, there are ten instances of failure for one of success. This is not owing to the want of natural beauty, for the sites are picturesque, the surface varied, and the woods and plantations excellent. The failure consists, for the most part, in a certain incongruity and want of distinct character in the treatment of the place as a whole. They are too large to be kept in order as pleasure-grounds, while they are not laid out or treated as parks. The grass which stretches on all sides

of the house, is partly mown for lawn, and partly for hay; the lines of the farm and the ornamental portion of the grounds, meet in a confused and unsatisfactory manner, and the result is a residence pretending to be much superior to a common farm, and yet not rising to the dignity of a really tasteful country seat.

It appears to us that a species of country places particularly adapted to this country, has not, as yet, been attempted, though it offers the largest possible satisfaction at the least cost.

We mean a place which is a *combination of the park-like and pastoral* landscape. A place in which the chief features should be fine forest trees, either natural or planted, and scattered over a surface of grass, kept short by the pasturage of fine cattle. A place, in short, where sylvan and pastoral beauty, added to large extent and great facility of management, would cost no more than a much smaller demesne, where a large part is laid out, planted and kept, in an expensive, though still unsatisfactory manner.

There are sites of this kind, already prettily wooded, which may be had in many desirable localities, at much cheaper rates than the improved sites. On certain portions of the Hudson, for instance, we could purchase to-day, finely wooded sites and open glades, in the midst of fine scenery—in fact what could with very trifling expense be turned into a natural park—at $60 per acre, while the improved sites will readily command $200 or $300 per acre.

Considerable familiarity with the country-seats on the Hudson, enables us to state that for the most part, few persons keep up a fine country place, counting all the products of the farm-land attached to it, without being more or less out of pocket at the end of the year. And yet there are very few of the large places that can be looked upon as examples of tolerable keeping.

The explanation of this lies in the high price of all kinds of labor—which costs us nearly double or treble what it does on the other side of the Atlantic, and the comparatively small profits of land managed in the expensive way common on almost all farms attached to our Atlantic country-seats. The remedy for this unsatisfactory condition of the large country places is, we think, a very simple one—that of turning a large part of their areas into park meadow, and *feeding* it, instead of mowing and cultivating it.

The great and distinguishing beauty of England, as every one knows, is its parks. And yet the English parks are only very large meadows, studded with great oaks and elms—and grazed—*profitably grazed*, by deer, cattle and sheep. We believe it is a commonly received idea in this country, with those who have not travelled abroad, that English parks are portions of highly dressed scenery—at least that they are kept short by frequent mowing, etc. It is an entire mistake. The mown lawn with its polished garden scenery, is confined to the pleasure grounds proper—a spot of greater or less size, immediately surrounding the house, and wholly separated from the park by a terrace wall, or an iron fence, or some handsome architectural barrier. The park, which generally comes quite up to the house on one side, receives no other attention than such as belongs to the care of the animals that graze in it. As most of

these parks afford excellent pasturage, and though apparently one wide, unbroken surface, they are really subdivided into large fields, by wire or other invisible fences, they actually pay a very fair income to the proprietor, in the shape of good beef, mutton and venison.

Certainly, nothing can be a more beautiful sight in its way, than the numerous herds of deer, short-horned cattle and fine sheep, which embroider and give life to the scenery of an English country home of this kind.* There is a quiet pastoral beauty, a spaciousness and dignity, and a simple feeling of nature about it which no highly decorated pleasure grounds or garden scenery can approach—as the continual surrounding of a country residence. It is, in fact, the poetical idea of Arcadia, a sort of ideal nature—softened, refined, and ennobled, without being made to look artificial.

Of course, any thing like English parks, so far as regards *extent*, is almost out of the question here; simply because land and fortunes are wisely divided here, instead of being kept in large bodies, intact, as in England. Still, as the first class country-seats of the Hudson now command from $50,000 to $75,000, it is evident that there is a growing taste for space and beauty in the private domains of republicans. What we wish to suggest now, is, simply, that the greatest beauty and satisfaction may be had here, as in England—(for the plan really suits our limited means better,) by treating the bulk of the ornamental portion as open park pasture—and thus getting the greatest space and beauty at the least original expenditure, and with the largest annual profit.

To some of our readers who have never seen the thing, the idea of a park, pastured by animals almost to the very door, will seem at variance with all decorum and elegance. This, however, is not actually the case. The house should either stand on a raised terrace of turf, which, if it is a fine mansion, may have a handsome terrace wall, or if a cottage, a pretty rustic or trellis fence, to separate it from the park. Directly around the house, and stretching on one or more sides, in the rear, lie the more highly dressed portions of the scene, which may be a flower-garden and shrubbery set in a small bit of lawn kept as short as velvet—or may be pleasure-grounds, fruit and kitchen-gardens, so multiplied as to equal the largest necessities of the place and family. All that is to be borne in mind is, that the park may be as large as you can afford to purchase—for it may be kept up at a profit—while the pleasure-grounds and garden scenery, may, with this management, be compressed into the smallest space actually deemed necessary to the place—thereby lessening labor, and bestowing that labor, in a concentrated space, where it will tell.

The practical details of keeping the stock upon such a place, are familiar to almost every farmer. Of course, in a country place, only comely animals would be kept, and a preference would be given to breeds of fine stock that "take on flesh" readily, and command the best price in the market. In cases where an interest is taken in breeding cattle, provision must be made, in the shape of hay and shelter for the whole year

* All attempts to render our native deer really tame in home grounds have, so far as we know, failed among us—though with patience the thing may doubtless be done. It would be well worth while to import the finer breeds of the English deer, which are thoroughly domesticated in their habits, and the most beautiful animals for a park.

round; but we imagine the most profitable, as well as least troublesome mode, to the majority of gentlemen proprietors, would be to buy the suitable stock in the spring, put it in good condition, and sell it again in the autumn. The sheep would also require to be folded at night to prevent the flocks from being ravaged by dogs.

With this kind of arrangement and management of a country place, the owner would be in a position to reap the greatest enjoyment with the least possible care. To country gentlemen ignorant of farming, such an extent of park, with its drives and walks, along with its simplicity of management, would be a relief from a multitude of embarrassing details; while to those who have tried, to their cost, the expenses of keeping a large place in high order, it would be an equal relief to the debtor side of the cash account.

TRANSPLANTING TREES IN WINTER.

BY HENRY F. FRENCH, EXETER, N. H.

Dear Sir—Several subjects touched upon in your January number, seem to deserve further agitation, before they are allowed to go off the list as settled; and as the old Granite State is snugly ensconced under a covering of nearly three feet of snow, so that the plow and the spade cannot be about their appropriate work, I hold it the duty of somebody who lives in it, to make it manifest by the pen, that our people though nearly buried, are not dead.

Believing that the only way in which progress can be made in "Rural Art and Rural Taste," is by a free interchange of ideas among those variously situated, as to soil and climate, who are interested in such pursuits, I avail myself of your kind invitation, again to offer you some suggestions, not in the way of a regular essay or scientific treatise, but for the purpose of aiding to keep up among your readers, *a familiar conversation throughout the Union*, on subjects of mutual interest; and first, let me add to your collection, my own experience on the subject of

Transplanting Trees in Winter.—Right opposite the window by which I am writing, are four trees, two of the elm, and two of the red oak, averaging twenty-five inches in circumference, and thirty feet in height, which have taken their present position within the last fortnight. They really, even in winter, relieve the *rawness* of a new place so much as to surprise the initiated.

Your advice to your New-Haven correspondent, to expend his first labor in moving a few large trees, rather than in shrubbery and walks, would be followed by any man who has once seen the experiment tried. Moving large trees is like buying stocks with the dividends *on;* you get your return forthwith.

You and your Philadelphia correspondent estimate the expense of transplanting a tree of much larger size than mine, at five dollars. My trees were moved an average distance of about half a mile, and reckoning the labor of a man at one dollar per day, and that of a yoke of oxen the same, they were dug up, moved, and completely planted, for *three dollars each*. As my method of moving them seems comparatively cheap, I will give it to you in a few words.

Selecting a tree near the highway, we removed the snow and found the ground very little frozen. We then dug a trench entirely round the tree, two feet deep, and under it,

so as to leave a ball of unbroken earth, from six to eight feet across the top, and rounded on the bottom to the shape of the inside of a common washbowl, and then left it, still upright, about three days, until the ball was frozen. We then attached a rope to the tree, about fifteen feet from the ground, having first wound it with matting, to prevent galling. Four men, with double blocks and pulleys, were sufficient to bring its top to the ground, when a common ox-sled, covered with strong plank, was backed under, and chained so as not to slip. Then shifting our ropes, we pulled the tree upright upon the sled, at the same time slipping it by means of chains, round the mass of earth, with the oxen, into the required position.

Eight oxen were used to start the sled with the tree, out of the hole, and when fairly on the road each tree made a comfortable load for two yoke, being, as the teamsters expressed it, about as much *heft* as a cord of green hickory. We unloaded by supporting the top by means of the pullies, and slipping the bottom upon sticks of timber, directly from the sled into the hole previously prepared, at one pull with the oxen. Having carefully filled the space about the ball with the soil, protected by a covering of straw from freezing, and placed three strong props against the tree, to maintain its uprightness through the next season, I pronounce the work done, postponing the matter of pruning until spring. Our soil is a sandy loam, free from stones, and our teamsters and their oxen understand their business thoroughly, or we could not so readily perform our operations.

I should not have thought it worth while to trouble you with a repetition of a process so familiar with many of your readers, but half the world who *do* read, seem to have an idea, that those modern improvements are confined entirely to ink and paper, and are as much surprised to see them really practiced, as though they never had heard of them. A friend of mine came in his sleigh to see my trees in their triumphal entry into the village, and after satisfying himself with seeing, inquired in a somewhat confidential tone, "Now do you really expect these trees are going to *live*?" And, by the way, how very common, and how very pernicious is the idea, that if you can make a tree *live*, the whole object is attained. When *will* it be understood that

"It is not all of life to *live*,"

even for a tree; that to be entitled to any respect, the tree, as well as the planter, must occupy some position, either useful or ornamental. It must not only *live*, but grow and flourish, and look cheerful, and happy, and contented, in its new situation, and not as if it had experienced some recent bereavement, and were *looking back* with regret to its former estate, and half changed, like Lot's wife, into a pillar of salt, or something else as unlovely.

It is a very small part of the art of transplanting to make a tree *live*. I set some oak fence posts last spring, and they *lived*, and threw out shoots half a foot long.

A tree may *live*, though set so deeply that it will scarcely grow an inch for years. It may *live*, if its roots be badly mutilated, and the top left entire and unsupported; but if he who planted it lives also, long enough to watch the progress, he will see, perhaps, about half the limbs die the first year, and the tree looking decidedly *down street!* The second and third year he will see a few half fledged branches, and possibly some new shoots from the trunk, and by the next year he will conclude to cut the top off, as should have been done at first, or get discouraged and leave landscape gardening to those who have better *luck*. A tree, tall and slender, taken from the thick forest may *live*, but it will expend its energies for years, in streghtening its trunk and roots, before its top will expand; for nature spreads no more sail to the breeze than she can safely carry. I *do* expect forest trees,

properly *selected*, properly *transplanted*, and properly protected, not only to *live*, but to be immediately ornamental.

In December, 1848, I moved three elms, of about the same size as those above named, in a similar manner, and they have prospered finely. Last winter I moved a rock maple of about five inches diameter, which, without the loss of a single twig, went through the summer apparently without the least suspicion of having been disturbed during its winter sleep. That tree, however, had been something of a traveller in its youth. It was pulled up in the forest and planted in the garden by a sister, who gave it to me on her leaving the homestead, about fifteen years ago. In 1844, I brought it seventeen miles, and placed it by my house, where it grew six seasons, when I removed it with my other household gods, to my present residence. I saw in the summer of 1849, at Lexington, Mass., an elm a foot and a half in diameter, moved the previous winter, which succeeded admirably. On the whole, I am convinced that there is no method so sure and satisfactory, of moving large trees at the north, as with frozen balls of earth in winter.

"A Constant Reader," in your January number, who speaks of recently moving elms, maples, and *white pines*, says he *shortened them in* all over the tips of the branches. I very much doubt the expediency of thus treating the *pine*. Having at least *five hundred* now growing, which I have transplanted within three years, I have carefully observed the habits of the tree. Each branch has a leading shoot, surrounded at its base by about five other shoots. If the terminal bud or *buds*, (for there are in winter about half a dozen together,) of the leading shoot be removed, the whole shoot, I think, always perishes to its base. The surrounding shoots, it is true, will soon go into an election of a leader, and the successful candidate will finally *bend-in*, and take what the Irishman called *the middle extreme*, and the tree will go on and grow; but so far as I have observed, always with more or less deformity at the point of the mutilation.

My first experiment in setting white pines, was in June, after the trees had made most of their growth for the year. They *lived*, but the *new* wood all died, which had much the same effect as shortening-in. They were set in 1844, and still exhibit the ill effects of their trimming, having an ungraceful crook at every point where the terminal shoot was destroyed. I should prefer *upon evergreen trees*, to cut away whole branches, if necessary, although by removing trees of only five or six feet height, I have found it very easy to take earth enough with them to preserve the top entire.

Since my first experiment, I have moved the pine in early spring. I have found no tree so easy to manage successfully, as the pine, both white and yellow; and having originally planted them for mutual protection, much closer than they can properly grow, I have since moved them from place to place, in spring, with almost as much facility as a lady rearranges her parlor furniture.

I intended to say something, in this letter, on the subject of *pruning fruit trees*, but have already exceeded all reasonable bounds, and will not venture upon a new subject.

With much respect, HENRY F. FRENCH.

Exeter, N. H., Jan. 14, 1851.

[A most excellent article, which we commend to all owners of sites where the "genius of the bare and the bald," hold sway. Ed.]

A CHAPTER ON MODERN PEARS.

BY HON. MARSHALL P. WILDER, BOSTON.

Mr. EDITOR—I embrace the first leisure moment to respond to your request, and herewith subjoin a few extracts from my "Notes on Pears."

The unpropitious character of the two past seasons, has so seriously affected, not only the quantity, but the quality of our fruits, that I have been unable to decide so fully as could be desired, upon the merits of those recently introduced, or their adaptation to our climate.

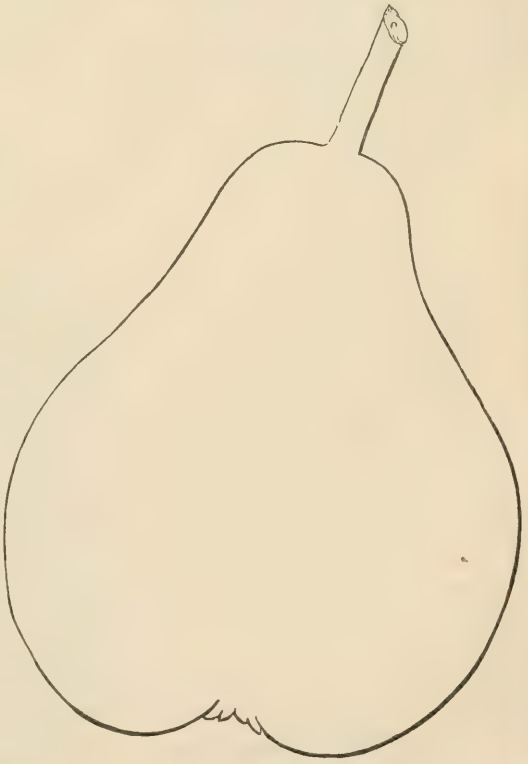
The year 1849, was distinguished for the destruction of the buds, which were, in the order of nature to produce the crop of that season, but whether the cause was attributable to the severe cold of the previous November, or to the sudden alternations of the weather in the subsequent winter and spring, has not yet been satisfactorily ascertained.

For many years previous, we had regular and fair crops of fruit. It was, therefore, confidently anticipated that the succeeding season would prove more propitious, and thus enable us to test the character of many new varieties, which have come to us under the influence of the "*pear mania*," from transatlantic gardens, and which, too often, have no other saving quality, than that of being "*far fetched and dear bought*."

In our expectations, we have been sadly disappointed, for, although the quantity was much increased over that of the year 1849, and the specimens in some instances of superior size and beauty, yet, on the whole, there has been a decided deterioration in quality.

The year 1850, has been marked with an unusual quantity of rain, causing excessive moisture and a low temperature, both unfavorable for the ripening of fruits, and to which cause may be attributed the immaturity and want of flavor so manifest in all the classes, a cause which has not only imparted to some of our finest kinds a watery and insipid taste, but has rendered the medium grades only fit for culinary purposes. So general has this been, that I have not at the present time, a single variety of the pear suitable for the dessert.

I regret that your call should be made under such unfavorable circumstances, and I shall, therefore, confine my descriptions to such va-

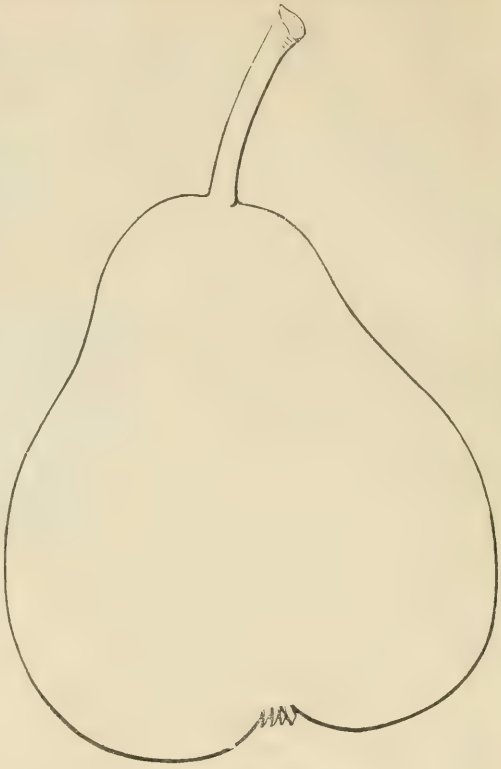


Nouveau Poiteau.

rieties of recent introduction as have given promise of excellence, reserving the right "*to amend*" as experience may hereafter dictate.

NOUVEAU POITEAU.—*Size*—large, three and a half inches high by two and a half in diameter. *Form*—obovate, obtuse pyriform, slightly contracted in the neck. *Stem*—short, rather stout, set a little on one side, and without depression. *Calyx*—medium size, open, with segments reflexed. *Color*—dull green, occasionally with brownish red cheek next the sun. *Flesh*—very melting and juicy. *Flavor*—rich, sweet and delicious, with melon-like aroma. *Season*—ripens early in November. *Quality*—gives promise of being classed with the "*best.*"

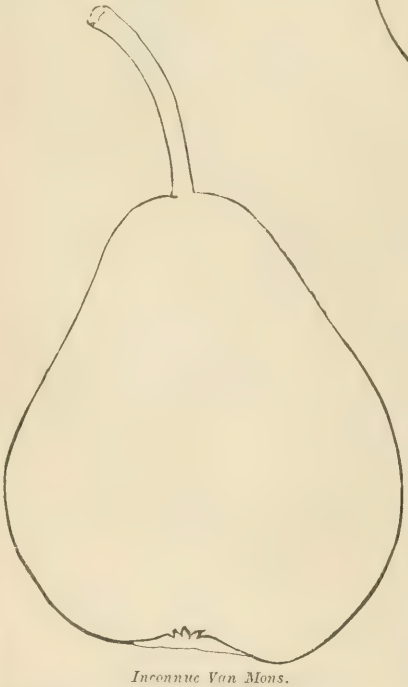
The Nouveau Poiteau is to all appearances, a desirable addition to our list of autumnal pears. The



Beurre Langlier.

tree is of an upright vigorous habit, comes into bearing early, and succeeds well both on the quince and pear stocks.

BEURRE LANGLIER.—*Size*—large, three inches high by two and a half broad. *Form*—obovate pyriform, contracted in the upper part, and terminating obtusely at the stem. *Stem*—one inch or more in length, inserted without much depression, generally upright, but occasionally on one side. *Calyx*—medium size, sunk in coarsely plaited cavity. *Color*—handsome light green, assuming at maturity a pale yellow, with a dull blush or red cheek on the sunny side, and covered with numerous grey russet dots. *Flesh*—yellowish white, melting, juicy and fine grained. *Flavor*—sprightly, sub-acid, rich, excellent, with a little perfume. *Season*—December to January. *Quality*—"*very good*" to "*best.*"



Inconnue Van Mons.

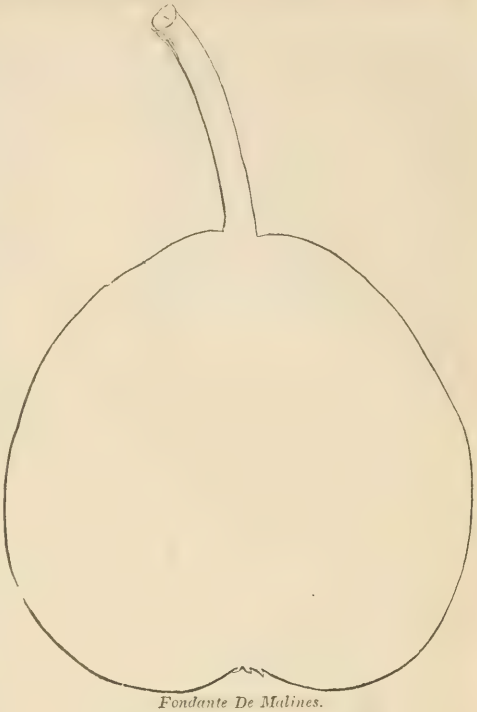
The tree is of a very strong vigorous habit, and succeeds well both on the quince and pear stock. The fruit adheres firmly until late in the season, keeps well, and promises to sustain its high reputation as a capital winter variety

INCONNUE VAN MONS.—*Form*—oblong-pyriform. *Size*—medium.—*Stem*—long, rather slender, one inch or more in length, and set without depression. *Calyx*—open, in abrupt, rather deep basin, frequently without segments. *Color*—dull pale green, over-spread partially with traces and dots of russet. *Flesh*—melting, buttery and fine. *Flavor*—pleasant, good, resembling a little the Glout Morceau, but without astringency. *Season*—December to February, keeps well. *Quality*—"*very good,*" and will probably prove to be an excellent late variety.

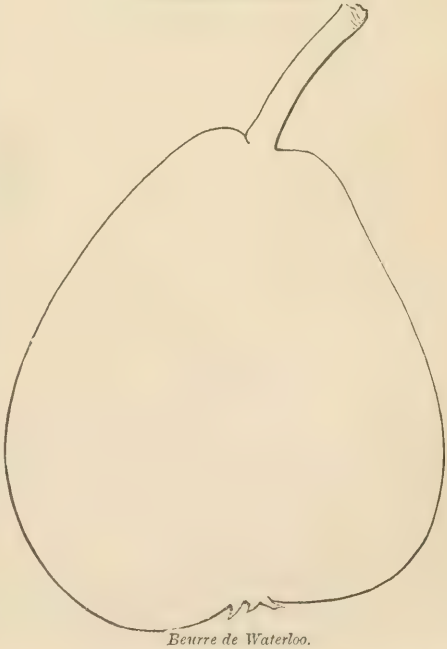
It succeeds well on the quince stock, and from which the fruit is much larger and finer than from standards.

FONDANTE DE MALINES.—*Size*—medium, 2½ inches long by two and a quarter in diameter. *Form*—roundish obovate. *Stem*—long, set without depression, sometimes curved. *Calyx*—small, in a narrow furrowed basin, and frequently without segments. *Color*—pale lemon yellow, slightly marked with patches and traces of cinnamon russet, and with brownish red intermixed with distinct spots of vermillion on the sunny side. *Flesh*—white, buttery and melting, a little granulous near the core. *Flavor*—sweet, excellent. *Core*—rather large. *Season*—last of October. *Quality*—promises to be classed as "*very good.*" A handsome fruit.

BEURRE DE WATERLOO.—*Size*—large, three inches high by two and a quarter in diameter. *Form*—obovate, obtuse py-

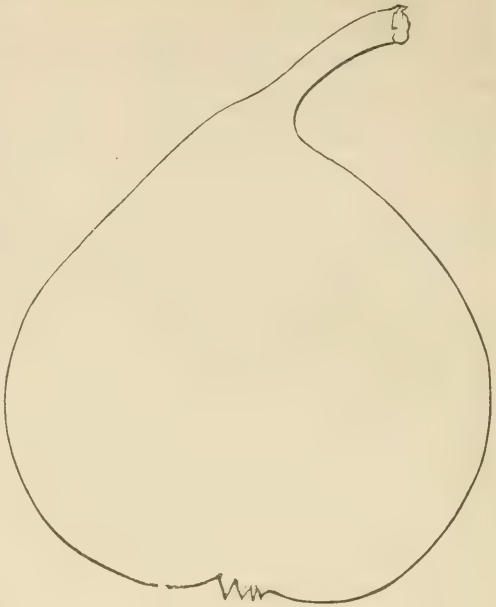


Fondante De Malines.



Beurre de Waterloo.

riform. *Stem*—set without much depression, on one side. *Calyx*—open, in shallow furrowed basin. *Color*—dull green, skin rough, covered with coarse russet traces and points. *Flesh*—melting and juicy. *Flavor*—sprightly saccharine, pleasant. *Season*—Middle of October.



Beurre Andusson

Beurre Andusson.—*Size*—medium, two and a half inches long by two and a half inches in diameter.

Saint Nicholas

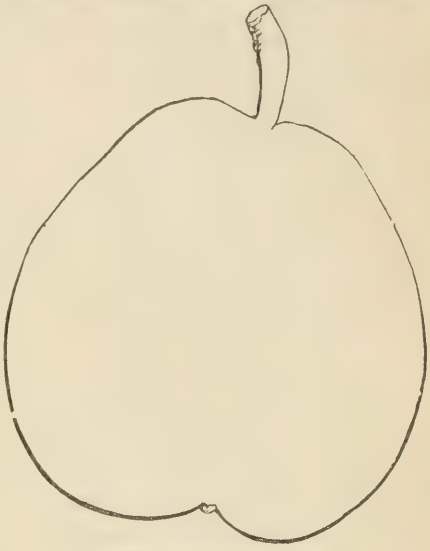
Form—obovate, acute pyriform, tapering rather abruptly into the stalk. *Stem*—short, stout, fleshy at the point of junction, set in an irregular manner. *Calyx*—large open, in a shallow basin. *Color*—yellowish green at maturity, with a dull red cheek on the sunny side, and covered with numerous russet dots. *Flesh*—melting, tender, juicy. *Flavor*—rich sub-acid, slightly perfumed with rose. *Season*—ripens from the first to the fifteenth of October. *Quality*—"*very good.*"

Saint Nicholas.—*Size*—large, three inches and a half long by two and a quarter in diameter. *Form*—oblong pyriform, the flesh tapering gradually into the stem. *Stem*—short, thick, wrinkled at the base, curved. *Calyx*—small, open, in broad flat basin. *Color*—greenish yellow, clouded with a thin covering of russet. *Flesh*—melting and juicy. *Flavor*—rich sub-acid, slightly perfumed, with some astringency next the skin. *Season*—October, first to fifteenth. *Quality*—"*very good.*"

Should this variety prove good as a standard, it will be a desirable market fruit. The French catalogues describe the size of the Saint Nicholas as "*petit*," *small*, but it has here uniformly borne *large* fruit.

Doyenne gris d'hiver Nouveau.—*Size*—rather below medium. *Form*—obovate, obtuse, pyriform. *Stem*—short, stout, inserted in a slight depression. *Calyx*—very

small, in narrow sunken cavity, often without segments. *Color*—dull russety green, profusely covered with coarse russet dots. *Skin*—rough and thick. *Flesh*—tinged with orange, coarse grained, but melting and juicy. *Flavor*—sprightly, vinous, good, slightly astringent near the skin. *Season*—keeps easily to May or June, ripens readily, and is free from the objections which rest against some of our latest varieties in this respect.

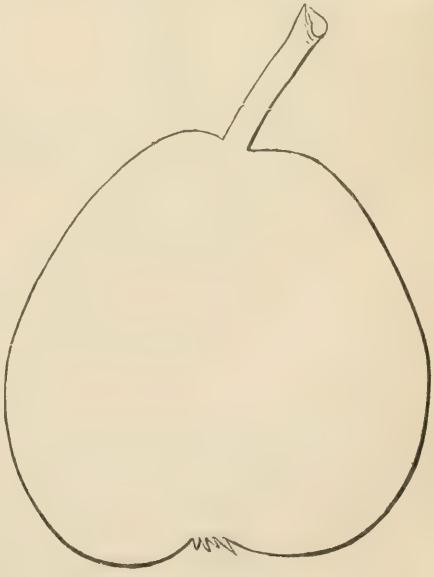


Doyenne gris d'hiver Nouveau.

Souvraine d'Ete.—*Size*—medium.—*Form*—roundish obovate. *Calyx*—open, medium size, sunk in moderately deep basin. *Stem*—short, inserted a little on one side, and without much depression. *Color*—lemon yellow, traced and dotted with light russet, and frequently with a bright red cheek next the sun. *Flesh*—melting, tender, and very juicy. *Flavor*—sprightly, a little vinous, rich. *Season*—ripens the last of August. *Quality*—"*very good.*" A handsome fruit.

Howell.—The Howell Pear is one of the most beautiful in cultivation. It was raised from seed by a gentleman of that name, at New-Haven, many years since. From the experience of three or four years, this variety gives promise of sustaining a high reputation.

Size—large, three inches high by two and three-fourths broad. *Form*—obovate, obtuse pyriform, contracted towards the stem, surface a little irregular, like the Thompson. *Stem*—one inch or more in length, often curved, and set without depression. *Calyx*—medium size, open, sunk in a moderately deep irregular cavity. *Color*—at maturity, clear pale yellow, covered with numerous small russet dots, and occasionally with a faint red blush on the sunny side. *Flesh*—melting and juicy. *Flavor*—rich, slightly acidulous, with a delicate aroma. *Season*—ripens from October first to fifteenth.

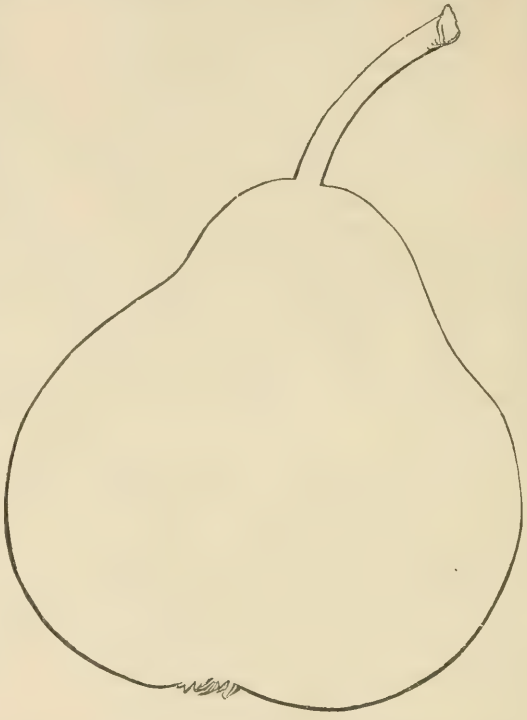


Souvraine d'Ete.

Triomphe de Jodoigne—*Size*—extra, weighing from ten to twelve ounces. *Form*—obovate, slightly pear shaped, terminating obtusely at the stem. *Color*—green, with occasional traces of russet. *Flesh*—melting, rich sub-acid, good. Ripens in November. The tree of this variety is exceedingly robust, but does not come into bearing so early as many other sorts.

Beurre Sprin.—*Size*—medium. *Form*—obovate, obtuse pyriform. *Color*—pale yellow, slightly traced with russet, and with occasionally a blush cheek. *Flesh*—melting, juicy, rich, with a peculiar aroma. *Season*—October.

Smith's Bordenave.—This variety was imported from France into Hartford, Ct., many years since, and has been somewhat extensively distributed by Alfred Smith, Esq., of that city. The fruit is of medium size, acute pyriform in shape, with a dull greenish russet coat. The flesh is juicy and buttery, and the flavor peculiar, sprightly and spicy. The true or original name, is yet unknown. Ripens about the middle of September. A valuable acquisition.



Howell

Beurre Bretonneau.—A large handsome fruit, ripening in December or January. The flesh is melting, high flavored and excellent, promising to add another fine sort to the winter varieties.

Soldat Laboureur.—Fruit large, resembling the Beurre Diel in form, but a little more depressed at the stem. Flesh, melting and buttery, with a little perfume. Ripens from December to February. This is a distinct variety, raised by Maj. Esperen, of Malines, a hardy and beautiful tree, and must not be confounded with the Soldat Laboureur of the French, or Beurre d'Aremberg.

Beurre Superfin.—This variety received a special premium at Angers, in France, for its excellence. The fruit is represented as very large, but with me it has not attained a larger size than the Louise Bonne d'Jersey. Color, dull pale green, with traces and patches of russet, and dull brown cheek. Flesh, juicy, melting, and with slight aroma. Ripens from the middle of September to the first of October.

Beurre Sterkmann.—Size, medium. Form, obovate pyriform. Color, dull greenish russet. Flesh, juicy, melting. Flavor, rich sub-acid. Ripens in November.

Among others whose characteristics give tokens of excellence, may be named: *Doyenne de Nerckmann*, ripening in November—*Beurre Scheidwiller*, in October—*Calinka*, a fine large yellow fruit, in December—*Beurre Benoist*, in October—*Beurre Giffard*, in August—*Baronne de Mello*, in October—*Fondante de Millot*, in November—*Bon Parent*, in October—and *Marechal de la Cour*, in November.

The above are all worthy of consideration, and to which I might add others; but under the unfavorable circumstances to which I have alluded, I refrain from further descriptions, not being confident that those already submitted will conform to the characteristics which these varieties may assume, under the influence of more congenial seasons.

Before closing this article, which has now been extended beyond my original design, permit me earnestly to recommend the practice of raising new varieties from seed, a practice which I am happy to inform you, is becoming quite general in this region. When this branch of cultivation shall be more perfectly understood, I entertain no doubt but we shall be able to produce varieties rivaling in excellence the most celebrated foreign fruits. In support of these views, we might name among the instances which have been crowned with success, the efforts of Mr. Francis Dana, of Roxbury, who has the past year, from promiscuous seed, fruited three varieties of pears of good character—two of which are entitled to particular commendation; one an early, the other a late sort. The Messrs. Hovey have also presented this season, a native variety of great beauty, and of fine quality, which promises to rank among the best of our early pears.

Unfortunately, the passion for new fruits, has placed so many under cultivation, that we are scarcely able to do justice to all. Instead of transferring, at once, scions of foreign varieties to healthy and mature trees for trial, our conclusions are too often drawn from imported trees, which are not fully established, or perhaps not adapted to the stock upon which they have been grafted.

During the past two years, we have witnessed the disastrous effects of unfavorable atmospheric influences. These are chiefly beyond our control; but cannot the other ills which vegetation is "heir to," be provided against? Cannot the tendency to deterioration, now so generally complained of, be arrested, and the pristine beauty and perfection of those fruits which were once the pride of our gardens, but now remembered only as "out-casts," be restored, and perhaps maintained? Science has wrought wonders in other departments of knowledge, and why should it not aid the pomologist, as well as the manufacturer or the mechanic? Doubtless it can; but our efforts must be governed by the laws of nature—for, if there *are* scientific principles upon which terraculture is founded, then no practice which is not based on these principles, can be depended upon with any certainty for success.

Your readers will excuse this digression, but in view of your being about to address the good people of the Empire State on the great subject of Agricultural Education, I cannot refrain from expressing the hope, that not only New-York, but other states, will take up this matter in earnest, and establish such systems of instruction as shall enable the cultivator, whether in the garden or in the field, to take his place by the side of the most favored class in the progress of improvement, for which our age is so distinguished.

Marshall P. Wilder.

Boston, Jan. 10, 1851.

REMARKS ON LEAF BLIGHT.

BY H. E. HOOKER, ROCHESTER, N. Y.

This disease, which has by some been mistaken for the *fire blight*, and by others deemed worthy of so little attention, that few notices of its presence, or hints for its destruction, have appeared in your magazine, is, I am persuaded, productive of more injury to nurserymen and those amateurs who undertake the propagation of their own pear and plum standards, than the *genuine* fire blight.

I propose, therefore, to state some of my views on the subject, hoping that brother nurserymen, at least, will give the readers of the Horticulturist the benefit of their experi-

ence; as I doubt not all of them have consulted their own interest sufficiently to make some experiments upon the matter.

The disease in question makes its first appearance in the shape of small brown spots or blotches, upon the under side of the lower leaves of the trees affected; from thence spreading rapidly to the neighboring leaves and branches, and gradually destroying the foliage, from the bottom upwards, until finally the plants remain leafless, or nearly so, in midsummer or early autumn. They usually attempt a second growth the same season, but the result is only a feeble, sickly shoot, which also sheds prematurely its leaves, and mournfully waits for another season of similar attempts and like success: its spindling branches and thorny stock, giving but poor encouragement to the cultivator, that his utmost skill with budding or puning knife, will cause a vigorous shoot to appear form its hide-bound stem, or induce his puny seedling to assume an air of health and beauty. Alas! bitter experience satisfies him that hope for leaf-blighted stocks is of that character which "makes the heart sick."

Its attacks are not entirely confined to small seedlings or *nursery* trees, although it is to these that it is most injurious; nor does it limit its depredations to a single town or state; from Belgium to Iowa, its presence is almost universal in grounds which have for any considerable length of time been devoted to the cultivation of pear and plum trees; sometimes a bearing tree is the object of its attention, in which case, a leafless tree in August, with immature and blackened fruit, is the reward of the waiting cultivator; a sorry remuneration to one who has expended his time and patience in catching "Turks," or pinching his pyramids; in cutting off knots, or watching for the first symptom of the fire blight; but as it is not often that its choice falls upon the orchard or standard tree, I shall confine my present remarks to its ravages in the nursery.

It is a fact well known to most nurserymen, that this disease has been the cause of more failures in the rearing of pear and plum trees, both in the nursery row and the seed bed, than all other causes combined. The stock which is attacked becomes impracticable to the budder before the season arrives for inoculation, or if, perchance, he is able to raise the bark sufficiently for his purpose, the languid state of the plant renders his efforts almost useless; and even when he succeeds in working the refractory subject, those which have been severely attacked make, at first, but an indifferent growth. The injury is not always nor commonly *mortal*, for stocks which have been attacked, appear after working, to recover their health, and finally to make as good trees as others; but the delay and vexation to the nurseryman is intolerable.

In the seed bed, he first discovers small patches, where the smaller and weaker plants have a brownish appearance, and are shedding their lower leaves, which patches increase in size, until the whole bed looks as if a fire had passed over it. If it is his first acquaintance with the pest, he consults some author on fruit trees, but finds no disease treated of which answers the description, and consoles himself with the idea that it will soon disappear; or, perhaps, he applies those universal remedies, lime and ashes, but with no good result. Some afflicted cultivators have, in their desperation, applied salt to their suffering subjects, until the entire disappearance of foliage convinced them that even salt was unable to save. Perhaps he consoles himself with the idea, that when he has them dibbled out in nursery rows, this trouble will be over. But another season's experience convinces him that whatever ailed his stocks, they have carried their ailment with them, and seem determined to perpetuate the indisposition, by giving it to their neighbors.

My observations lead me to the belief, that whatever be the cause of this difficulty, it is *not* to be found in the work of an insect. The most critical examination which I have

been able to make, has revealed neither insect nor egg, but only a species of rust, or fungus, which spreads over the surface of the leaf, and closes the pores, thus producing death.

I am also convinced that it is exceedingly infectious, and that when once a patch of trees has been affected, there is but little hope to the nurseryman, that he will be entirely free from it on that piece of ground. It is also pretty certain, that stocks which are diseased in the seed bed, will carry the complaint with them to the place where they are planted out; but this last result will not always follow—I have, myself, known one (and but one) instance, in which leaf-blighted seedlings, which were removed far away from other trees, recovered entirely their proper health and beauty.

It is impossible to raise pear or plum seedlings which shall be entirely free from this disease, in an old nursery, by any method of prevention or cure which is known to us; most of the old established nurseries have, therefore, depended in a great measure upon purchasing this species of stock, and as its attacks do not seem permanently to injure good sized plants, they are thus enabled to supply their customers with trees, which, when removed to the fruit yard, or the orchard, give entire satisfaction.

One peculiarity has probably been observed by all who have examined this subject, which is, that budded or worked trees are comparatively free from attack; these often retaining their foliage unspotted, and continuing to grow rapidly, while their natural or seedling neighbors are leafless. Why the *leaves* of our most esteemed varieties are able to withstand attacks which are fatal to those which we are accustomed to believe are more hardy than they, I am at a loss to determine.

The cause of so great an evil as this, deserves, of course, our best attention; but it is still a profound mystery; it makes its appearance without warning, and has no fore-runners, no busy hum of insect, nor endless throng of aphides, ushers in the work of destruction. It cares not for rain, nor does the mighty wind check its steady progress; sunshine and cloud seem to favor, and darkness to offer no obstacle to its work of desolation; lime and ashes, plaster and guano, are but aggravations; even copperas water, and filthy whale oil soap, are alike agreeable to the mysterious visitor; like the unseen malaria, it is known only by its effects. A friend who has some acquaintance with it, believes the potatoe rot has attacked his little pear trees.

The *cure* has not yet transpired, but there is much hope in *prevention;* my own observations lead me to recommend the planting of pear and plum seeds, and stocks, at a distance, say at least half a mile from any other nursery; the superior advantages of a virgin soil, combined with freedom from adverse influences, will generally be sufficient to ensure at least one healthy crop. Probably many old nurserymen have observed, that beginners usually have their best success (with these trees) first; after this their progress is like that of others, somewhat variable, and against obstacles, of which leaf blight is the chief.

Shall we not hear from others upon this subject, which, although of little consequence to the orchadist, is eminently worthy the attention of nurserymen. H. E. Hooker.

A very interesting article to all the cultivators of the pear, and one which we hope will elicit the remarks of other correspondents. We examined the spots, caused by this leaf-blight, last summer, under a powerful microscope, and are satisfied that, as Mr. H. suggests, they are caused by a fungus. And this has led us to suspect that the cracking and blight of many varieties may be merely the effects of this same parasite. We have noticed a tree loaded with the finest crop of Brown Beurres, looking as fair and promising as possible till midsummer. Then suddenly the leaf-blight would attack the foliage—small

spots and an occasional crack would appear upon the fruit, the pears would cease to swell, and the whole crop would prove an utter failure. Was not this failure of the crop the immediate effect of the attack of this fungus called the leaf blight, and is not this fungus the partial cause of the so-called decline of some of the old varieties? Further observation will establish the truth of these conjectures if they are correct, and as the attacks of fungi are not past prevention, we hope something may also be discovered to answer this purpose. At any rate, this is an important subject of investigation.. Ed.

REMARKS ON THE DEGENERACY OF FRUITS.

BY A. MARSHALL, WESTCHESTER, PA.

There is an opinion prevalent with some pomologists, that fruits of various kinds, apples and pears for instance, degenerate by a continuation of grafting or budding, through a long series of generations, and that new varieties obtained from seed are not subject to this degenerating process, until the variety has been long cultivated and propagated by buds or branches.

They say—that propagation by grafting or budding is a continuation of the original tree of the particular variety thus propagated. That is—all the Baldwin Apple trees now growing in the world, are parts and parcels of the original Baldwin Apple tree grown in the state of Massachusetts, and that the ages of those trees are not to be counted from the times they were respectively grafted or budded, but from the time the seed germinated that produced the original tree of that name; that at some future period of time, (not very well ascertained,) this variety of tree will produce degenerate fruit; that the quality of the fruit can never be brought back to its primitive character, because of the age of the parent tree. Yet a seed of this degenerate fruit grown on a tree whose parentage may be traced back two or three centuries, will produce a new variety possessing distinct characteristics; that it will retain those qualities until it arrives at a certain age, when its degeneracy will commence also.

Although this theory has strong names in its support, some of whom have, no doubt, received it on trust without investigation—I have never seen sufficient evidence in the facts relied on, to convince me of its truth.

A particular variety of the apple, (called new,) is discovered in a new settlement, growing on virgin soil; the fruit is large, handsome, and of good flavor. It becomes a favorite, and is extensively propagated by budding or grafting, and spread over large districts of country. The soil on which this variety was first discovered as a "seedling," is cultivated, cropped, and impoverished—manures are applied—the soil is improved and strengthened—it again produces good crops of corn, wheat and grasses; but this apple, (now called old,) does not exhibit its former fair proportions and other praiseworthy qualities. It is condemned as a worn-out, degenerate variety, and the only reason assigned for thus giving the cold shoulder to an old friend is, that it has been legitimately propagated through a long series of generations. Such a reason for casting off an old friend is very easily gotten up, and may be made to assume a very plausible shape.

Now let the "rejected" apple tell its own tale of woe. "My ancestors were highly prized by your fore-fathers. Both flourished together in primitive times. The virgin soil furnished our family with plenty of such food as suited to produce our then fair proportions and peculiar flavor. That soil was cropped and impoverished by your relatives, un-

til many of them were obliged to go to the far west to obtain their bread—those who remained behind were compelled to resort to artificial stimulants, which entirely changed the nature and relative properties of the soil, so that we were unable to obtain those particular particles of food which, in former days, contributed so largely to give us that peculiar flavor and other valuable properties which we then exhibited. Let me tell you in all candor, before we part forever—that if you will place our family in a soil and climate congenial to our taste and constitutional habits, similar in every respect to that in which our ancestors flourished with so much credit, we will engage to redeem our reputation. The younger members of our family are as sound in stem and branch, as ever our ancesters were. Give us the same food to eat, and climatical air to breathe, and we will produce as good fruit as they ever did."

The pomologist here cuts the argument short by saying—"You are an old superanuated variety—we have tried you too long already—you have set 'our children's teeth on edge'—we will have nothing to do with you—our *Pomological Congress* has *rejected* you, and that's enough! Here is a new seedling variety lately brought to notice by an eminent nurseryman, who has thousands of them for sale. His price is rather high, to b sure; but then our Pomological Congress has recommended it, and I guess they know what's what about good or bad apples."

"Why bless you"—says the rejected apple—"I know all about *that seedling*. A boy, after having eaten an apple of our variety, threw the core containing the seed, in a hedge by the way-side. A tree grew—the fruit had some good properties, and accidentally fell into the hands of a pomologist, who gave it a high sounding name—set it afloat on a popular current, and the wind so far, has been in its favor."

That some varieties of fruit do not succeed so well in localities differing in soil and climate from those in which they originated, is a generally acknowledged fact, clearly demonstrated; but that fact has nothing to do with the question of *degeneracy*.

The Baldwin Apple is considered good in every respect in the state of Massachusetts. Grafts taken from those trees and cultivated in the southern part of Ohio, produce fruit subject to the "dry rot." Grafts taken from those dry-rot fruit trees in Ohio, and cultivated in Massachusetts, produce fruit equal to those trees which remained at home. Does this prove degeneracy?

It is said that the stock on which a graft is worked has an influence on the fruit. I acknowledge that it has individually, but not generally. The Angouleme pear, worked on the quince, slightly changes the fruit for the better. But take a bud from the Angouleme pear on quince, and work it back on the pear stock, and there is no difference between its fruit and the Angouleme that has always been worked on the pear stock. This explains what I mean by the influence being individually, but not generally.

Mr. Downing, in his work on "Fruits and Fruit Trees of America," speaking of the White Juneating Apple, says—"this is an old variety mentioned by Evelyn in 1660, and described by Ray, in 1688, and is a very tolerable little apple." p. 78. Of the Golden Pippin, he says, "It is a very old variety, being mentioned by Evelyn in 1660, but it thrives well in many parts of England still." p. 112. Of the Canada Reinette, he says, "It is doubtful, notwithstanding its name, whether it is truly of Canadian Origin, as Merlet, a French writer, describes the same fruit in the 17th century; and some authors think it was brought to this continent from Normandy, and carried back under its new name. At any rate, it is a very large and handsome fruit, a good bearer, and of excellent quality in all respects." p. 129. Of the Bartlett pear, he says, "It is an English variety, originated about 1770." p. 334.

Some of our pomologists complain, that certain varieties of fruit are not so good now as when they were little boys. Perhaps the difference is in the taste and judgment of the *boy* and those of the *man*.

I believe that a sound healthy graft, taken from a vigorous tree in perfect health—worked on a seedling stock of the same genera, grown in similar soil and climate—thus reproduced for ages, will never degenerate. That the degeneracy complained of, is in the soil and cultivation—not in the tree or its fruit. A. MARSHALL.

West Chester, Chester County, Pa.

NOTES ON THE DISEASES OF FRUIT TREES IN THE WEST.

BY PROFESSOR TURNER, ILLINOIS COLLEGE.

DEAR SIR—I confess my delinquencies as a correspondent; but I have been unusually engaged this past fall in attending Institutes and delivering lectures on the "*Education of the Industrial Classes*," in neighboring counties, as well as in an unusual pressure of business at home. When I have pushed the matter a little farther in my own state, I shall probably have a word to say, with your leave, through the Horticulturist on this theme.

I see favorable notices of your work on "Country Houses," on all sides, and I have never known a book in the west receive so universal a commendation from all classes and professions. As there was, for some time, no other copy to be had here, I loaned mine until I was obliged positively to refuse to loan it any more, to keep it from being worn out by others.

There are no less than five houses built, or being built, after your models in this village already, all taken from this book; and I think when completed, they will be almost the only tasteful houses in the place. For myself, I may say I expected a good work, but so far as the architecture of *houses* is concerned, it is at least much more in accordance with true principles of taste, and much better adapted to meet the wants of the country, and the age, than I could have believed forthcoming in the present state of both the art and the science in this country. And for this, as well as for much else, we Americans owe you our sincere and hearty thanks. I think it ought to be placed on the table of every man who has a family, in the United States, and if so, it would do more to improve their taste, and indirectly to form their morals and manners, than four times the same money expended in the ordinary methods of teaching the "young idea how to shoot." It is a book, too, of first lessons, regarding the very place where all instructions should begin—"home." But I must proceed to my annual report; and first—

APPLES.—There has been throughout this state, an unparalleled blight in the tops of apple trees. At first I thought it was the *Scolytus Pyri*, or some similar insect. But I have never been able to obtain the least proof of the existence of an insect, or to find any marks of his ravages whatever, and many facts induce me to think it is not an insect.

Nor was there any unusual drouth or severity of winter that could have produced it. The winter was so mild and favorable here, that tender shrubs never stood it better, and the ground at the time of the blight, was unusually moist for that season of the year. The springs were higher than they are now, or have been since.

Indeed, the season has varied from ordinary seasons so far as I know, but in one single respect. It was generally quite cool until Jul·, after which we had an unusual number

of *excessively hot days*, the thermometer ranging from ninety to one hundred degrees in ordinary exposures, and from one hunded and thirty to one hundred and forty degrees in the *sunshine*, through at least two days, when I noticed it. Still, in alternate days, it frequently and suddenly sunk several degrees. Did the excessive heat, or the sudden changes, or both, or neither, do the mischief? I cannot tell. At any rate, there was scarce a terminal branch of an apple tree in this county that was not more or less affected, and some of them several feet down below the last years growth. On my grounds, it affected young nursery trees from one to three years old, worse than older trees. At first, the leaves near the end turned black, and usually, by cutting the stem, a black and dead spot would be found below the dying leaves, of greater or less extent. Sometimes these black patches of bark and wood, would be found at some distance below any dead leaves, but the leaves were sure at last, to die down to that point. But it passed away without any serious injury to the trees, so far as can now be seen.

People talk and write, as I have done, about "the blight," but I am convinced that this form of blight has never been in this part of the country before—whether caused by heat, or cold, or insects, or what not.

Pears.—On pears this blight was more injurious by far. The branches not only died down to the lowest black spot, as was the case with the apple, but they continued to form black spots of bark still farther and farther down, even to the ground, when not arrested by amputation. It is worthy of remark here, that I had six pear trees, not grafted, upon whole seedling roots, and only six; of these, five out of the six, some ten years old, were almost entirely ruined.

The one not injured, in the spring I filled with sulphur, by putting it in a half inch hole, as I did some of my plum trees, merely to see if it would correct the disease of the leaf, of which I spoke in a former communication. Whether this did any good or not, I know not; but the fact was, every tree around it was sadly injured, while it *wholly escaped*.

Again, of several hundred plum trees in the same lot, known to be grafted on "entire seedling" roots, not one was in the least degree affected with the blight through the season, though many of them stood in the midst of a young nursery of apples, all of which were more or less dead in their terminal branches. It should be noted, however, that *a part* of these trees were plentifully supplied with ashes, bones, &c., when they were transplanted several years ago—though not all of them.

Toward the latter part of the season, I began to suspect that the disease in the pear tree was analogous to the erysipelas in the animal system—and as I had got tired of amputation, I cut away all the dead corticle, or outer bark, as fast as it appeared, and left the inner bark untouched. The inner bark in such cases lived, and I see is alive now. On one tree, there was a blotch on the trunk two feet long, and some four to six inches wide, in which the cuticle appeared entirely dead, while the inner bark was fresh. I proceeded on the same principle as physicians do with erysipelas, and arrested the progress of the blotch, and thus far saved the tree. How it will do in the spring, I cannot say. I am sure this disease is unlike anything I ever saw before, and I am inclined to think it is of atmospheric origin, or proceeds from the presence of animalculæ, and that it progresses by the same general law as erysipelas in the human system, and that peeling the dead corticle off as soon as it appears, and applying a weak alkaline wash, will arrest its downward and fatal progress; and also, that sulphur, as applied to plum trees for the curculio, may prevent it, if done early in the season. But I only make these suggestions in the hope that they may stimulate others to a more extensive and satisfactory investigation of the facts in the case. All theories which I can form, are as yet quite unsatisfastory, while

many of those proposed, are entirely at war with the facts as they appeared here, though they may apply well elsewhere.

By the way, the erysipelas has appeared more fatally in the human subject in these parts, within a few years, than was ever before known. Do the same atmospheric or other causes, conduce to both diseases in the animal and vegetable world? Let us observe and inquire. At all events, if no remedy is found, it will be useless to attempt to cultivate pears in this western country.

It should be noticed, however, that the only pear trees of twenty or twenty-five years old, in this vicinity, have stood for many years in an *unbroken sward* of blue grass, which is *hard* and *compact*. Some of these trees were somewhat blighted at the top, but far less than younger trees differently situated. One seedling tree in the same lot,.standing in a cultivated garden, about fifteen years old, showed *not a single blighted leaf*, while all others near it were blackened more or less.

It is certainly true here, that trees grafted upon *entire seedling roots*, and trees standing in a hard, tough, blue grass sward, have escaped all forms of blight as yet, far better than others, [which is partly owing to their making very moderate growth—instead of running into over-luxuriance, and partly to the grass protecting the roots from excessive changes—like mulching. Ed.]

The blight to which I alluded in a former paper, and which has heretofore prevailed here, starts from the south-west of the trunk and large branches, and spreads both upwards and downwards, while the leaves are still unaffected; and seems precisely like that form of blight which is described by your correspondent as killing his apple trees in Mobile, in the December No. of the Horticulturist. I cannot have been mistaken in calling this form of blight a *severe scald*—the facts here abundantly prove it. Beside, how do your advocates of the frozen-sap theory, account for the above case. *Does frost kill apple trees in Mobile?* I apprehend they would be killed still worse in the same way, farther south, if their trunks were exposed to the scalding sun, continually drying the liquid sap into solid gum. But while the blight of former years thus began, and appeared to spread like a general mortification of the animal tissues, the blight of this year appeared to begin on or near the extreme twigs and small branches, at once affecting the leaves, while still the trunk and large branches were entirely sound—and spreading mostly downwards, first on the outer bark, like erysipelas, and not by a general simultaneous blackening and gangrene of the interior tissues, as in the other case.

Again, it frequently began on the most shady side of the tree, even where the sun never shown upon the branch; and while extreme heat is the only *known* cause to which I can ascribe the disease in this latter case—still it operated by producing a general paralysis of the functions of the cuticle, if at all, and not by a sudden scald of a particular part of the trunk, as in the former case. I have been thus particular and tedious, because it is, in my present view, as absurd to suppose all blights in trees are alike, as it is to suppose all fevers and inflammations in men and animals alike. It is true, a blight is a blight, and so a fever is a fever, whether produced by cold or heat, or miasma or surfeit, or starvation; but physicians find it quite convenient, after all, to distinguish between fevers and their causes, before they prescribe remedies—and that both frost, and heat, and miasma, and animalculæ, and surfeit, and starvation *may*, in different localities produce different modes and forms of this *baleful pear tree fever*, has at least, been rendered sufficiently probable to awaken suspicion and inquiry. Let us try, therefore, to obtain accurate descriptions of its *forms* and *modes* in different places and seasons, as the only sure first step in a truly philosophical investigation. It is certainly, however, about as dangerous here to

trim a pear tree, or disturb the blue grass sward around it, as it would be to trim a boys' nose, hair and ears off, and lay him out naked to roast, in a hot summer's sun, thinking thereby to make him grow faster, or into better shape. To say nothing of our horticulturists, our most ordinary observers now know better here, though in many cases their knowledge cost them more than it is worth, for their trees are all gone.

Quinces and Plums.—Quinces have been affected also, by a similar blight, not so fatal as to the pear, but more so than on the apple, which soon recovered of their own accord, and bore their fruit as usual.

For two years I have put sulphur in a few of my plum trees, and have got some fruit from those trees alone. I think as sulphur is usually put into the trees, it can be of no possible use. A hole is bored, a little sulphur thrown in, perhaps half filling the hole, and stopped with a loose plug. Of course the air soon dries up the pores about the hole, and no part of the sulphur is absorbed and carried up with the sap. I have tried this mode several times without the least success. For two years past, suspecting what might be the cause of failure, I have proceeded more cautiously, and all I can say is, on those trees I had some fruit, on others none at all. I first bored a smooth half-inch hole, with a sharp center-bit, *almost* through the sap wood. I then took fine sulphur, in a half-inch gouge, and with a round stick crowded the hole as full of this substance as it could be pressed, up to the point I wished my plug to reach. I then fitted the plug with entire accuracy, so as not to split the bark, while it still pressed hard upon the sulphur, and excluded all air from the hole. I then sealed the outside fast with grafting wax, so as to exclude air from without. Of course, if the sulphur is pushed into the heart-wood, or if the air come into the hole it can do little or no good, as it cannot be absorbed.

I suspect also, that after the sulphur is pretty well absorbed, so as to leave the hole in part vacant, the effect must cease, and as I did not repeat the process, it may be that was the reason why many of my plums were at last stung by the curculio. Still, here again I consider nothing proved, only let us "keep trying." But as this process would naturally be ordinarily performed, it is evident it must utterly fail, even if good in itself. Let it be performed on both sides of the tree with *great care*, and repeated once in two weeks, or so—or once a week—and then it would be fairly tested. Let us also try with care, some more soluble minerals, or salt of iron, copperas, &c.—finely pulverised—and carefully inserted. Probably none of these would reach the fruit without injuring the tree. But that is not certain until it is tried; for even a noxious exhalation from the bark and leaves, might repel the intruder.

Grapes.—Oh grapes, grapes!! We go from bad to worse. All the grapes raised in Illinois last season, would not make nectar enough to fill Hebe's smallest cup. All remedies and theories, have utterly failed. The grapes set well as usual, but in July, even before the extreme heat came on, they began to rot. I visited nearly every grapevine in this place, to try to ascertain the facts in the case, and I found but one solitary vine which even tolerably retained its fruit. This was one about five or six years old, planted on the top of the lime scoriæ thrown out from the mortar bed while building a large brick house. Its bed was supposed to be from one to two feet thick, of lime and brickbats, covered with a few inches of soil by the natural process of grading about the house. The grapes on this vine ripened well with no extra care, and it was the only case in town, or in the county, so far as I know. I tried, myself, all sorts of experiments. I obtained cedar posts 22 feet long, from St. Louis, and elevated some. I sent to New-York and got a barrel of plaster of Paris for others; lime for others, ashes and bones for others. Some I covered six inches deep with saw-dust; some I covered with a coping, and kept them as dry as

possible; others I kept water standing around all summer. Some I trimmed close in various ways, and others I did not trim at all. But the rot took the whole of them at last, indiscriminately. At one time I thought those mulched with saw-dust and elevated on the cedar poles, had escaped, and was about to inform you of my entire triumph, as the others were nearly all gone, while these were fresh and fair. But fortunately, before I got time to write my exultation, these mostly went in the same way; they however ripened a few bunches, and strange to tell, almost every grape that ripened had a worm in it, and was worthless. Now, query—is this rot caused by an insect, and did not the mulching destroy the larvæ under these vines until all the others were "used up," the insects then gathering upon those also, by emigration? I confess it looks like it. Again, the week before they began to rot, I saw a great number of little insects on the wing under those vines—somewhat resembling a small fly, but so quick on the wing it was impossible to catch them, and I never saw one light, nor could I find any in any other part of the garden, though there were hundreds under this grape arbor in the early part of the day. This attracted my attention strongly at the time. But I thought little of it until I found the grapes all worm-tenanted in the fall.

Again, I had almost forgotten the conclusion, until a week or two since, I was informed while in Quincy that one man had saved his crop, by his son's catching an insect about the vines early in the season. His theory, I learn, is that the rot is caused by an insect which deposits the larvæ in the bloom, similar to the pea-fly—hence those grapes which perish early, say about the size of green peas, do not perfect their larvæ, while those which hang on late, and ripen as some of mine did, do perfect them.

This also accords well enough with the fact, that old vines are worse infected than new ones—and the same of localities.

Some soils, also, may be propitious to the larvæ, others destructive—while mulching, liming and various other processes, may tend to destroy them. But here I have no theory and no opinion; the facts I have detailed are facts—that is all I care as yet to say, except that I think them sufficient to set others to watching and thinking; for in the present state of things, grapes, over thousands of square miles in the west, can be of little or no use, and he who first discovers the true cause and cure, will be one of the greatest benefactors of his country and race. *Have any others found their grapes wormy in the fall?*

Melons.—I have found for two years, that melons, and especially water-melons, did far best either on new ground, (which all admit,) or after a crop of tomatoes, where they yielded twice as well as on other old ground.

Cherries.—All the cherry trees which I stripped of their outer bark some years since, have escaped all disease thus far, and continue to do well. I intend to experiment upon the corticle of the pear next season with a rasp, as I have a suspicion that they may thus be benefitted. At all events, with us, their most critical period by far, is while changing from a smooth to a rough-barked tree.

I am conscious I have been tedious. I will therefore close, and leave you to publish as much or as little of this long epistle—in entire or separate numbers—as you please. Meantime, I am as ever truly yours,

J. B. Turner.

Jacksonville, Illinois, Jan. 7, 1851.

THE RARE TREES AND PLEASURE GROUNDS OF PENNSYLVANIA.

BY A MASSACHUSETTS SUBSRCIBER.

If in this country, where the people from the highest to the lowest, profess to be patriots, they can once be persuaded that *planting* is a patriotic work, or where all are close calculators of profit and loss, it can be demonstrated to their satisfaction, that it is a profitable one—the end is attained. To those who ask why they should plant for posterity, when posterity has done nothing for them, I would urge these two arguments, profit and patriotism. With all due deference to the wisdom of the oracular Dr. Johnson, I deny both his premises and conclusions, when he offers the following consoling paragraph to the Scotch planters: "There is a frightful interval between the seed and the timber. He that calculates the growth of trees, has an unwelcome remembrance of the shortness of life driven hard upon him. He knows that he is doing what will never benefit himself, and when he rejoices to see the stem rise, is disposed to repine that another shall cut it down." A less gloomy moralist, the good and gentle Herbert, in enumerating the advantages of cultivating the earth, alludes to a common idea, and draws the beautiful simile, "that as the smell of a fresh turned sod is good for the health of the body, so may the contemplation of death be for the health of the soul." The first and last portion of Dr. Johnson's assertion is easily controverted by the calculations and experience of English gentlemen, who have estimated that "a single acre planted with the poplar or larch, will, in favorable situations, and in no longer period than twenty years, yield a produce worth ten times the fee simple of the land." The low price of labor and higher value of wood in Great Britain is about equalised in this country by the lower value of land, so that while the individual estimates are different, the aggregate account is similar. Walter Scott, who was a practical planter, found that in eleven years the necessary cuttings and trimmings from a larch plantation would pay the expenses attendant upon the first setting out, fencing and rent of land; after that the value increases in a compound ratio. The larch tree is not only a fast growing tree, but produces firm and durable wood, and is well adapted to a soil and climate where little else will flourish. By it large tracts of country in the north of Perthshire were converted from waste unprofitable land to fine woods and pasturage for cattle. The Duke of Athol remarked that the white clover sprung up beneath the larch, the annual fall of the leaves manuring the ground, so that the seeds of this plant which lay dormant beneath the sod, required only a little stimulant to bring them up, after the sod had once been disturbed by the setting of the trees. I should like here to speak upon the subject of spontaneous vegetation, an error very commonly maintained; but the limits of this article will not allow such a digression. To return to our larches. The poet of nature protested against a "vegetable manufactory" of them being carried on his neighborhood, and I can well imagine that they would not harmonize with the rich landscape of Cumberland and Rydal Mount; but on the bleak hills and barren seashore of New-England, where Emerson, in his Report on the Trees of Massachusetts, has recommended them to be planted, the scenery is far different. These hills, as well as the islands on the Massachusetts coast, were formerly covered with wood, but the injudicious and careless felling of the outer trees first, let in the cold winds upon those which had been tenderly sheltered,

> "And the shady nook
> Of hazels and the green and mossy bower,
> Deformed and sallied, patiently gave up
> Their quiet being."

Some mute inglorious MILTON of those days may have felt like WORDSWORTH,

"A sense of pain when he beheld
The silent trees and the intruding sky."

Our ancestors had a valid excuse for thus destroying the primeval forest. It was to them no longer the good green-wood of merrie England, peopled with fairies, Robin Goodfellow and Puck, but each tree afforded a secure shelter for the savage Indian, who, with tomahawk and scalping knife, darted from behind the huge grey boles, to inflict a sanguinary death upon those who ventured beyond the "clearings;" thus he who destroyed a tree brought his labor to an excellent work. But now the times have changed; "trees are notes issued from the bank of nature," increasing in value as the eastern portion of the country is becoming rapidly denuded of wood, and the railroads, which in every direction are weaving a net-work amid the northern forests, consume annually the growth of hundreds of acres. Another EVELYN is needed to sound throughout the land a parenesis, to awaken the man of fortune and the farmer to the knowledge that there is pleasure as well as profit in raising something else besides cabbages and monster squashes, for trees will live where not even a turnip will grow. A gentleman in this neighborhood has very wisely offered a premium to any one who plants and makes grow a certain number of forest trees within a limited time. Some such plan as this, generally adopted by Agricultural Societies, would have a good effect, and make our bleak hills and waste places

"One ample theatre of sylvan shade."

This long digression upon planting brings me at last to the subject with which I intended to have commenced—a visit to the Woodlands, near Philadelphia.

This beautiful place was formerly the seat of WILLIAM HAMILTON, a man of taste, and a patron of the Arts and Natural Sciences. He was a lineal descendant of ANDREW HAMILSON, a Scotchman, well known in the early settlement of Pennsylvania as WILLIAM PENN'S deputy governor. WILLIAM HAMILTON, after his return from Europe in 1784, built a splendid house in the Italian style, on the banks of the Schuylkill, and laid out the grounds around it, giving to the sylvan spot the characteristic name of the Woodlands. The mansion is large, and the rooms, even now, though deserted and unfurnished, present an appearance of elegance; the base walls were once ornamented with fine paintings, and the niches adorned with statues. The works of art have vanished, but the beautiful features of nature remain unchanged; the view from the stately piazza, over the bright waters and fertile fields, still delights the eye, as it did in days long passed. Seen from that point, the river in its windings presents the appearance of five detached lakes, the intervening portion—

"The shadowy woodlands hide it,
And the waters disappear."

In this smiling retreat Mr. HAMILTON delighted to gather together a variety of rare trees and plants, and did much by his enthusiasm, to cultivate a love for such pursuits, when they were less common than at the present day. His hot-houses were extensive, and filled with the floral riches of the tropics, rarely seen in this country half a century ago. An anecdote is related of the fate that befel one of the first Camellia flowers that bloomed in this country in his green-house; Mr. HAMILTON was social in his habits, and accustomed to give large entertainments; on one one of these occasions, the first flower had expanded, and he, desirous of delighting and astonishing his friends, had directed the gardener to have it in readiness to be placed in the center of the dinner table. At the proper time, as he walked towards the green-house to see that his orders were fulfilled, he met one of the ladies of the party, who had in her hand the prize, the only flower, and stepping up to

him in great glee, said, "see what a lovely flower I have plucked." Mr. HAMILTON exclaimed with an oath, "Madam, I had rather have given you one hundred guineas than that you should have picked that precious blossom." [A rather ungallant speech, for doubtless the lady was herself, the fairer flower. ED.] The grounds were planted with taste; the grouping and variety of trees produce a picturesque effect; yet the place has suffered severely from changing owners, and is now far inferior in beauty to what it was during HAMILTON'S life time. He bequeathed it to his nephew, JAMES HAMILTON, by whom it was finally sold to a gentleman of Philadelphia, who occupied the house for a time, and felled many of the finest trees for fuel. Quite recently, one of the most stately specimens of the black oak (Quercus tinctoria) existing in this neighborhood, was laid low. This regal tree was four feet in diameter. A walk leading from the mansion in a northerly direction, and of which there is still some remains, was termed the "English walk," on account of its sinuous course; it is skirted with the yellow Broom (Cytisus scoparius,) which grows here luxuriantly. He probably first brought the plant to this country, and it seems to have been a favorite with him, as it existed on his other estates of Bush Hill and Lemon Hill. HAMILTON introduced the *Platanus orientalis*, of which there is a fine specimen still flourishing at the Woodlands, probably the first in the country; it was under the eastern plane that XERXES halted his army of seventeen hundred thousand men, according to EVELYN, "to admire its pulchritude and procerity, and became so fond of it, that spoiling both himself, his wives and great persons of all their jewels, he covered it with gold gems, necklaces, scarfs, bracelets and infinite riches, * * * and when he was forced to part with it, he caused the figure of it to be stamped on a medal of gold, which he continually wore about him."

HAMILTON also introduced (besides the Wych Elm from Britain, and the Tartarian Maple, indigenous to Russia,) the Lombardy Poplar, for a while such a universal favorite, but which is now rarely considered an ornamental tree. The cause of this deterioration may be explained by the fact that the poplar is diœcious, and only the staminate tree was brought to this country; consequently, it has been propagated by suckers or cuttings, which root easily and grow rapidly, so that the tree is now in its dotage; it would be well for some one to import either seed or a pistillate tree, and thus raise a new stock. Long rows of this stiff tree have justly given to the lovers of the picturesque, a distaste to it, but the landscape-gardener ought not wholly to neglect it on that account, any more than the landscape-painter would refuse to use a certain color because another artist employed that color too profusely; a few Lombardy poplars planted judiciously produce a fine effect—their tall symmetrical forms rising above their neighbors, catch the eye and break the monotony of a view. The stately heads of the poplars were laid low in New-England many years ago, on account of the stories circulated that a frightful insect had been found to infest them; this creature seemed to partake somewhat of the fabulous character of the dragon, but whether real or imaginary it caused the destruction of this tree, which had become so fashionable after the French revolution,* that it was planted in front of nearly every house, to the exclusion of all others.

The Gingko tree (*Salisburia adantifolia,*) a native of China, a number of which are flourishing there finely—brought to my mind, as its strange leaves flashed in the sun-light, Dr. BIGELOW'S address to this curious tree:

> Thou queer, outlandish, fan-leaved tree,
> Whose grandfather came o'er the sea,
> A pilgrim of the ocean—

* The poplar was adopted by the French as the liberty tree.

Didst thou expect to gather gear
By selling out thy chopsticks here?
What a mistaken notion.

These are said to be the largest, if not the oldest in the country; however, I do not think they exceed in age the one on Boston Common, which was removed to its present site about fourteen years ago, when the Greene estate was levelled to build Pemberton Square; it was thought at the time a great risk to remove so large and delicate a tree, but it must be either moved or cut down, modern improvement said, and the event has proved that the attempt was judiciously made, for though it languished for several years, and has probably increased but little in size since its transplantation, it is now growing, its roots and branches somewhat cut away, in order to convey it through the narrow streets, so that it will never vie in beauty of form with its brethren of the Woodlands. HAMILTON did not import and nurse up foreign trees to the exclusion of those of native growth, but gathered together at the Woodlands, the most beautiful from the northern and southern states: there are two noble specimens of the *Fagus furuginea* now growing there, probably the only ones in that section of country. The *Magnolia cordata* was also, through his means, brought from the south. It was as gardener on this estate, that PURSH, the author of *Flora Americæ Septentrionalis*, began his career in this country. His predecessor was JOHN LYON, also a collector of American plants, for whom a genus of the Andromedeæ was named—Lyonia. The green-house formerly under their care, is still stocked with plants; a part of it is used as a rosarium, where are blooming in great luxuriance, a variety of the queen of flowers, which are cultivated to plant out upon the graves; for the Woodlands was laid out a few years ago as a cemetery. I could not but lament that so fine a house, in such a lovely situation, was not still occupied by a gentleman of taste and fortune; the reason given for the desertion of the place, was the prevalence of the fever and ague, which is now said to have almost disappeared.

To this lovely spot, once the resort only of the gay and fashionable, the rich and the learned, the dwellers of the crowded city now come out to bury their dead—

And nature's pleasant robe of green,
Humanity's appointed shroud, enwraps
Their monuments and their memory.

Yours. B.

Cambridge, Mass., 1851.

ON RAISING POTATOES FROM SEED.

BY WILLIAM PARRY, BURLINGTON CO., N. J.

HAVING derived much pleasure an information from reading accounts of the experiments recorded in the Horticulturist, I feel it right to contribute what little lays in my power towards the general good, in part return for the benefits which I have received from the experience of others.

The potato being so valuable an esculent, every precaution should be used to extend its usefulness, by increasing the varieties and testing the merits of each, as well in quality as quantity produced, that those which prove superior, either in early ripening or adaptation to particular soils or climate, may be disseminated throughout the country, and those which are inferior be discarded from cultivation.

The usual mode of raising potatoes from the *seed*, by planting in the open garden, being tedious and requiring several years to develop their true characters, has deterred many

from the undertaking. The seed require a long time to vegetate, and the growth being slow thereafter, noxious weeds and grass get the start and become very troublesome; the plants attain but a diminutive size early in the season, which is the most favorable time for their growth; the tubers do not set until the latter part of summer, when the dry weather and parching rays of the sun check their future growth, and tend to ripen the crop before it has attained much size, so that the product of the first year is very trifling, and several years are required to ascertain the true qualities of the seedling.

The great object, then, is to get the plants so advanced in the spring, that the tubers may set and grow in the early part of summer, when the refreshing showers alternating with the genial rays of the sun are most favorable for their growth.

The plan that has succeeded well with me for several years past, is as follows: Soon after the ripening of the potato tops, I gathered the balls of the Mercer potato, mashed them together, threw on a little water and left them a few days to ferment, when the seed were easily separated from the pulp and husk, and after being dried were placed away secure from frost or moisture, to remain until spring for planting. The latter part of the third month the seed were sowed in a hot-bed under glass, the grains being sown a quarter of an inch asunder. From the middle to the latter part of the fifth month, the plants being three or four inches high, and frosty weather appearing to be over, on damp cloudy days or soon after a rain, the plants were taken up with a portion of earth to each and placed in loose rich soil, at about the same distance from one another as potatoes are usually planted.

The plants neither wilted nor showed any signs of suffering from transplanting.

It is of importance that they should be put down into the earth two inches lower than they stood in the seed bed; they will thus produce more roots: but care must be taken that the young plants do not produce tubers while they remain in the seed-bed, as they will be very much weakened if allowed to do so before they are put out. The earthing-up of the potatoes raised from the seed, should be done early, and not too heavily; for if the plants are put out in weather which is not very unfavorable, they soon begin to shoot up, and the entire soil is penetrated by very small fine fibres, which would be injured by a high or late earthing-up, the production of tubers be delayed for a fortnight or three weeks, and the produce diminished. The potato plants thrive best in a rich sandy soil which has been deeply dug. [Potatoes should never be earthed up at all. Ed.]

By the above method I have raised full sized, merchantable potatoes the first year from the seed; many hills having but three to five potatoes and all of a fair size for market—others having a larger amount were proportionally smaller. By recurring to seedlings we may obtain a healthy article free from rot or any other disease, but I have no confidence that they will long remain so after being exposed to the same influence under which the parent stock has degenerated.

The failure of the potato crop in many parts of the country has induced farmer to experiment carefully in order to ascertain if possible in what situations or kinds of soils they generally succeed best, and from what experience I have had, I am inclined to the opinion, that where the land is clayey and tenacious, thereby holding the heavy rains in immediate contact with the tubers until the hot sun coming upon them, while thus thoroughly saturated with water, completes their destruction, drying and baking the ground over and around them, so as to exclude the air; that if they were so near ripe at the time as to retain their form until harvested, they soon give way after being exposed to atmospheric influence. Such soil is unsuitable for raising potatoes—and the same cause that has heretofore prevented the cultivation of the more delicate sweet potato on heavy

land, now operates against the Mercer or Irish potato, which seems to have degenerated in vigor, and has at length yielded to those adverse influences (which the sweet potato never could withstand) that had been imperceptibly, though no less certainly impairing its constitution for many years previous; and that sandy loam, open and porous soils, which allow the excess of moisture to pass off freely from the plants, whereby severe storms act like gentle showers merely to moisten the roots and invigorate the plants, and the genial rays of the sun thereafter meliorate the land to the great benefit of the growing crop—is the most certain land on which to depend for a good crop.

Respectfully, WILLIAM PARRY.

Cinnaminson, Burlington county, N. J., 1st mo. 24, 1851.

NOTES ON THIRTY-TWO VARIETIES OF PLUMS.

BY C. REAGLES, ESQ., SCHENECTADY, N. Y.

LIVING in a plum growing district, where the fruit is produced in great perfection and abundance, I may claim a right to know something about plums and plum trees. I therefore send you a few scraps from my Note Book, in hopes they may be of some benefit to those who are not similarly blessed.

1. *Peach Plum.*—I am well satisfied of the impossiblity of successfully cultivating this plum to the northward of New-York. The winters are so severe as to destroy nearly every year the new wood and blossom-buds; consequently fruit from this variety is very rarely obtained. I have grown it for the last twenty-two years; in the nursery, frequently, hundreds of trees are entirely destroyed, rarely showing a symptom of vitality on the approach of vegetation the ensuing season.

2. *Lombard.*—This variety of native origin, is certainly one of the most profitable plums, for orchard culture, that has as yet come under my notice—not only producing enormous crops of perfect fruit, annually, but at the same time growing vigorously with ordinary attention, accommodating itself to almost every variety of soil; a great desideratum in my opinion, for such soils as are not adapted to the general cultivation of the plum.

3. *Schenectady Catharine.*—A variety peculiar to this locality, where it has enjoyed the reputation of a first rate fruit, and deservedly so, as it posseses all the qualities desired, except large size—i. e., hardy, extremely productive, and of a flavor but rarely excelled.

4. *Coe's Golden Drop.*—A great favorite wherever it is generally known; this plum has already been extensively planted in this city, although I opine it will not be very profitable to the market grower, as it is rather a shy bearer; but its late maturity and excellent flavor, will always command a place for it in the kitchen and amateur garden.

5. *Coe's Late Red.*—Has been somewhat over praised, as it has nothing to commend it but the lateness of its ripening season. [A quite correct opinion for your latitude, but farther south it is a valuable fruit. Ed.]

6. *Columbia.*—I have fruited for the last five years; my experience, during which time, goes to prove it hardly worthy of the high encomiums which have so frequently been bestowed upon it. The tree is a hardy, vigorous grower, and good bearer, but the fruit is liable to *rot*. This plum is of a magnificent size and color—flavor rather mediocre.

7. *Bleecker Gage.*—A tolerable bearer, and an excellent fruit in all respects.

8. *Green Gage.*—Assumes a variety of characters in different soils. I have fruited it under the several names of Wilmott's Late Green Gage, Schuyler Gage, Rensselaer Gage,

and Ida Gage. To produce its fruit in perfection, (north of New-York,) it requires a warm, deep soil, with a southern inclination; and on a wall, with the latter mentioned exposure, it can be grown to twice its usual size and beauty.

9. *Prince's Imperial Gage.*—A well known and extensively cultivated variety, on which the grower can calculate to a certainty the number of bushels of fruit he can annually carry to market. This fact, connected with its other good qualities, will keep it in cultivation when other higher flavored sorts are comparatively abandoned.

10. *Huling's Superb.*—This mammoth fruit does not seem to have attracted that universal notice to which it is entitled in so eminent a degree. It is a decided anomaly in this class of fruits, carrying out its gigantic proportions in wood, foliage, and fruit. It is tolerably hardy, a good or ordinary bearer, fruit of the largest size, &c.—superior flavor.

11. *Blue Imperatrice.*—A very late plum—decidedly superior to Coe's Late Red in this latitude.

12. *Jefferson.*—An excellent plum in all respects; a little tender here, and very difficult of propagation to any extent.

13. *Lawrence's Favorite.*—Has proved itself highly deserving of the numberless eulogiums so unsparingly bestowed upon it by those who have partaken of its highly delicious fruit. The tree is a strong grower, quite hardy, differing very materially in this respect from the Jefferson.

14. *Purple Magnum Bonum.*—A very ordinary plum, frequently reproducing itself from seed, with scarcely any perceptible difference of habit or fruit. One of these seedlings is "Duane Purple," which does not differ materially from a half dozen other seedlings cultivated here, under the name of Red Magnum Bonum.

15. *Yellow Magnum Bonum*, (or Egg Plum,) is quite a favorite here, being very hardy, productive, late, and consequently a very profitable plum for market.

16. *Marten's Seedling.*—A new yellow plum, which originated in the garden of the gentleman whose name it bears, residing in this city; it has fruited with me this last summer, and proves to be a plum of the finest quality, superior to the majority of highly lauded foreign varieties.

17. *Mediterranean.*—Another new seedling from the interior of this state, nearly as large as the Peach plum; superior to it in point of flavor, and some six days earlier. It forms a beautiful, thrifty growing tree, perfectly hardy. *Ripens* the latter part of July and first of August.

18. *Washington.*—A magnificent showy plum, of very good flavor; hardy and productive; a general favorite.

19. *Early Royal.*—Rather tender; a slow grower; very productive; an excellent, high flavored fruit; ripens the latter part of July.

Lucomb's Nonsuch.—Quite mediocre.

20. *Autumn Gage.*—A prodigious bearer; quite late, and nearly first rate.

21. *Cloth of Gold.*—Early; but too dry and small to commend it to favorable notice.

22. *Red Diaper*, (or Mimms)—Grows very much like the Green Gage; the wood of the new growth is occasionally destroyed by severe winters. It is a red plum, as its name indicates, exceedingly delicious and melting.

23. *Emerald Drop.*—An abundant bearer; makes a fine tree; well worthy of cultivation.

24. *Imperial Ottoman.*—This is a beautiful plum; ripens first of August; flavor occasionally first rate; almost too tender for this latitude.

25. *Morocco.*—Fruit second rate; a shy bearer; quite early and hardy. *Ripens* first of August.

26. *Nectarine.*—Second rate; much below my expectation; very large, but quite coarse.

27. *Purple Favorite.*—One of the best of purple plums; hardy, productive, and delicious.

28. *Royal.*—An excellent plum of French origin, and quite hardy; not equal, however, to the Purple Favorite.

29. *Purple Gage.*—Nearly, if not quite as good, as the Purple Favorite.

Ickworth Imperatrice.—Seldom ripens.

30. *Red Gage.*—Almost as productive as the Lombard; greatly surpassing the latter, however in flavor. [Deserves to be far more extensively planted than it has been. Ed.]

31. *Denniston's Red.*—I think this plum may be safely ranked among the first rate, for such, thus far, it has certainly proved to be; vigorous, hardy and productive.

32. *Denniston's Albany Beauty.*—Not as good as the foregoing, but well worthy the attention of cultivators. I remain your ob't serv't. C. Reagles.

P. S. Another season I shall be able to send you specimens of the new seedling varieties, that you may judge of their qualities, compared with other good sorts. C. R.

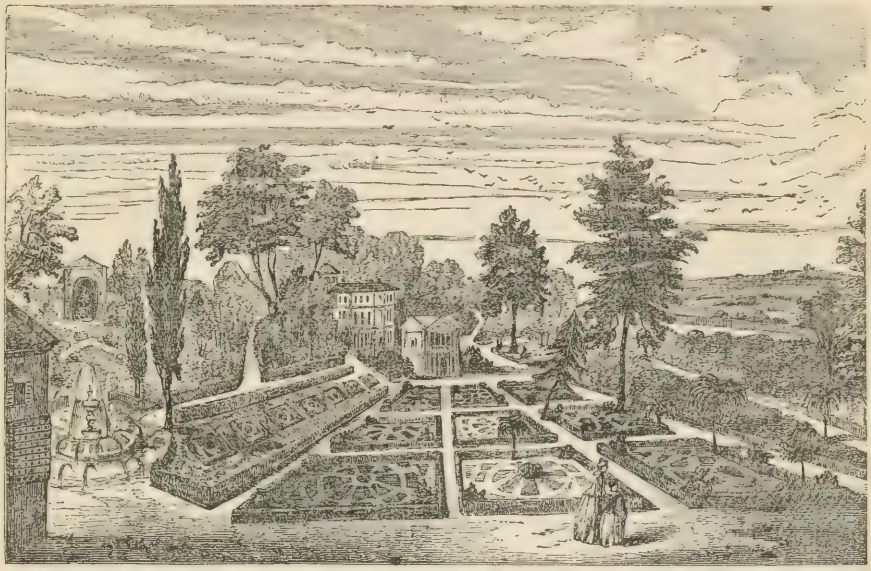
Schenectady, Jan., 1851.

NOTES ON DECORATIVE GARDENING—Architectural Terraces.

BY H. NOEL HUMPHREYS, Esq.*

I have, in my last communication, shown how terraces may be produced at an exceedingly moderate expense, suitable to various styles of cottage and villa architecture, and it is on this moderate scale that suggestions for the formations of terraces will interest the greatest number; but this most important feature of decorative gardening would be but imperfectly explained did we finish the series without alluding to terraces in their more palatial form, and in their noblest proportions. It is not always necessary to terrace effects, on the largest scale, that architectural decorations should be introduced, for, by simple embankments, as suggested in our paper on cottage terraces, gardenesque features of a very noble character, and suited to residences of the highest class, may be obtained. The engraving, from a portion of the Papal Gardens of the Belvedere at the back of the Palace of the Vatican, at Rome, will serve to show what may be produced by such simple means; and though still susceptible of great improvement, the geometrical figures produced by deep box edgings, and the symmetrical effect given to the variety of elevation by the embankments, are evidences of a true feeling for the gardenesque in the designer. The effects to be produced near main terraces, by deep, massive, box edgings, have been much neglected, and might be revived with great effect; but this feature must be cautiously used, and not carried too far, as, in that case, the attempts invariably sink into the meritricious—when, for instance, these cropped edgings are tortured into initial ciphers, or even entire epigrams, as in some of the later Italian villas; or to select a more modern instance, in the magnificent gardens of the Earl of Shrewsbury, at Alton Towers—gardens reclaimed by art from land, which some years ago was no other than a barren waste—where, if my memory serves me correctly, a bust has been placed upon a marble column, in a conspicuous part of the ornamental gardens, at the base of which, the ingenious and persevering spectator may decipher, in the cropped box, the motto, "He made

* From the Gardener's Magazine of Botany.



THE PAPAL GARDENS OF THE BELVEDERE.

the desert smile,"* in honor of the late Earl of Shrewsbury, under whose directions the improvements were effected. Such elaborate conceits are apt to make the spectator smile; but they are not, as I have observed, without their precedent, for some of the finest of the Italian villas are disfigured by similar effusions, and to a much greater extent—of which several ridiculous and scarcely creditable examples might be cited.

Of the most architectural terrace, with its full complement of statuary, vases, fountains, &c., the villa Panfili Doria, may be cited as an example. Of this magnificent specimen, the engraving will contain a very good general idea.

As displaying the true feeling of the palatial terraces of the school, these Italian villas are the safest, as they are the original models. I find, in my Italian journal, the following notes on these fine monuments of architectural and gardenesque composition.

The villas of the modern Romans merit the name of palaces, and form one of the most characteristic features of Italian scenery. Of those in the immediate vicinity of Rome, that of the Borghesi family, which is the confiscated domain of the unfortunate Cenci, is the most important; it is open to the public, and forms the Hyde Park of the Romans; but neither Hyde Park, nor Kensington gardens, nor the Tuilleries, nor Versailles, can convey any idea of the peculiar charms of a Roman villa. There is a freshness of vegetation about the suburban *delizie* of Rome, that the neighborhood of large towns always tarnishes, except in Italy. But there, close under the walls of Rome, the Appenine Anemone, of various tints, brightly colored Scillas, the deep crimson Cyclamen, and many beautiful Orchids, put forth their fragrant blossoms in early spring, as in the woody dells of the secluded country. The "sky-cleaving Cypress" shoots aloft its pointed or forked peak, to a height equal to the Poplar of the North, and noble groves of Ilices, whose vast trunks spread above with groined branchwork, into densely-matted foliage, form,

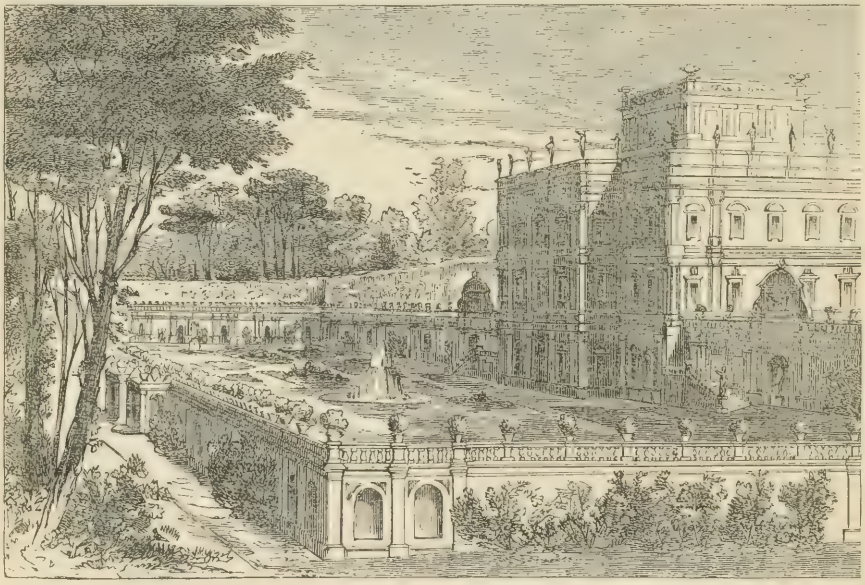
* I am not certain whether the vegetable literature may not be confined to initial ciphers, and the motto itself engraved on the column; if so, the ciphers serve the purpose of illustration equally well.

"A pillared shade
With echoing walks beneath."

The peculiar character of the tufted heads of the Stone Pines, too, grouping in picturesque masses with terraces, statues, and fountains, tend to invest Roman villas with a charm peculiarly their own.

To return to the subject of our engraving, the villa Panfili Doria is next in importance to that of the Borghesi, among the villas near Rome; but its somewhat greater distance, and unhealthy situation, cause it to be much less frequented. The palace itself is, on its exterior, almost entirely encrusted with antique *alto-relievi*, some of which are of the highest merit, and most exquisite beauty. This is a luxury which cannot be imitated except in Italy, where the soil still teems with the fragments of her ancient splendor, many of the finest of these *relievi* having been turned up in digging the foundation of the building. The whole of the composition of this palace and gardens—for the whole forms one harmonious design—is an excellent model for the careful examination of the modern student, but the reduced dimensions of our engraving, can convey but a very inadequate idea of the numerous and elaborate details.

I find the following brief notices of one or two other villas in my journal, with which I shall conclude this article, which, though not strictly of a *practical* character, is yet, I think, calculated to convey my opinion of the styles to be adopted in the higher class of terraces, better than more mechanical definition.



THE VILLA PANFILI DORIA.

The villa Albani, perhaps, realises more than any other the dreams of the Italian villa, that haunt the imagination before having seen Italy. It is chaste, and severely classic in its style, yet, withal, richly magnificent, a rare and difficult combination. And to its intrinsic features, the charms of position are superadded, the range of views from its marble terraces commanding the finest portions of the picturesque campagna, with its rugged lines of half crumbling acqueducts, and scattered groups of detached ruins.

The gardens of the Borghesian villa Mondragone, at Frascati, combine to an unusual extent the richness of immediately surrounding features with the result of art. The noblest views over the Appenine range, and the campagna, the latter extending even to Rome, where the vast cupolas of St. Peter's are seen describing a dim blue arch upon the horizon. The various and picturesque foreground offered by the rich marble terraces of Mondragone, have not been overlooked by artists; many distant views of Rome, and of the ever attractive campagna, have been painted from this spot.

MR. DOWNING'S LETTERS FROM ENGLAND.

DROPMORE is the seat of LADY GRENVILLE, and has been celebrated, for some time, for its collection of rare trees—especially evergreens. It is in the neighborhood of Windsor, and I passed a morning there with a good deal of interest.

In point of taste and beauty, Dropmore disappointed me. The site is flat, the soil sandy and thin, and the arrangement, in no way remarkable. The mansion is not so fine as some upon the Hudson, and the scenery about it, does not rise above the dead level of an uniformity rendered less insipid by abundant plantations. There is, however, a wilderness of flower-garden about the house, in which I saw scarlet geraniums and garden vases enough to embellish a whole village. The effect, however, was *riant* and gay without the sentiment of real beauty.

But one does not go to Norway to drink sherbet, and Dropmore is only a show place by virtue of its *Pinetum*. This is its collection of evergreen trees, and particularly of the *pine* tribe—every species that will grow in England being collected in this one place.

Of course, in a scientific collection of evergreen trees, there are many that are only curious to the botanist—many that are only valuable for timber, and many that are almost ugly in their growth—or at least present no attractive feature to the general eye. But there are also, in this Pinetum, some evergreens of such rare and wonderful beauty, growing in such exquisite perfection of development, that they effect a tree-lover like those few finest Raphaels and Vandykes in the great galleries, which irradiate whole acres of common art.

The oldest and finest portion of the Pinetum occupies a lawn of several acres near the house, upon which are assembled, like belles at a levee, many of those loveliest of evergreens—the Araucaria or pine of Chili, the Douglass' Fir of California, the Sacred Cedar of India, the Funebral Cypress of Japan and many others.

Perhaps the finest tree in this scene is the Douglass' Fir (*Abies Douglassii.*) It is sixty-two feet high, and has grown to this altitude in twenty-one years from the seed. It resembles most the Norway Spruce, as one occasionally sees the finest form of that tree, having that graceful downward sweep of the branches and *feathering* out quite down to the turf—but it is altogether more airy in form and of a richer and darker green in color. At this size it is the symbol of stately elegance. Here is also a specimen, thirty feet high, of *Pinus insignis*, the richest and darkest of all pines, as well as *Pinus excelsa*, one of the most *affectedly* pretty evergreens—its silvery leaves resembling those of the white pine, but drooping languidly—and *Pinus macrocarpa* with longer leaves than those of the Pinaster.*

* *Taxodium sempervirens* is here seventeen feet high—rich dark green in foliage and very ornamental. *Cryptomeria japonica*, nearly as large, rather disappointed me—keeping its brown leaves so long as to disfigure the plant somewhat. *Picea nobilis* is a truly beautiful fir tree.

But the gem of the collection is the superb Chili Pine or Araucaria—the oldest, I think, in England, or, at all events, the finest. The seed was presented to the late LORD GRENVILLE by WILLIAM IVth—who had some of the first gigantic cones of this tree that were imported. This specimen is now 30 feet high, perfectly symmetrical, the stem as straight as a column—the branches disposed with the utmost regularity, and the lower ones drooping and touching the ground like those of a larch. If you will not smile, I will tell you that it struck me that the expression of this tree is *heroic*—that is, it looks the very Mars of evergreens. There are no slender twigs, no small branches—but a great stem with branches like a colossal bronze candelabrum, or perhaps the whole reminds one more of some gigantic, dark green coral than a living, flexible tree. Yet it is a grand object—in its richest of dark green, its noble aspect and its powerful, defiant attitude. This is quite the best specimen that I have seen, and stands in a light, sandy soil on a gravelly bottom—on which soil I was told, it only grows luxuriantly. I do not know how well this fine evergreen will succeed at home. It is now on trial—but I would hint to those who may fail from planting it in *rich* damp soil, that even here, it completely fails in such situations.

After leaving what I should call the Pinetum in full dress—i. e. in the highly kept part of the grounds near the house, you emerge gradually into a tract of many acres of nearly level surface, which reminded me so strongly of a scattered Jersey pine barren, that had it not been for tufts and patches of that charming little plant the *heather* in full bloom, growing wild on all sides, I might have fancied myself in the neighborhood of Amboy. The whole looked, and much of it was, essentially wild, with the exception of carriage-drives and foot-paths running through the mingled copse, heath and woodland. But I was soon convinced of the fact that it was not entirely a wild growth, by being shown, here and there, looking quite as if they had come up by chance, rare specimens of pines, firs, cedars, etc. from all parts of the world, and presently I came upon a noble avenue, half a mile long, of Cedars of Lebanon (a tree to which I always feel inclined to take off my hat as I would to an old cathedral.) The latter have been planted about twenty-five years, and are just beginning to merge the beautiful in the grand. Everything in the shape of an evergreen seems to thrive in this light sandy soil, and I suggest to the owners of similar waste land in the middle and southern states, to take the hint from this part of Dropmore—plant here and there in the openings the same evergreen trees, protecting them by a slight paling at first, and gradually clearing away all the common growth as they advance into beauty. In this way they may get a wonderfully interesting park—in soil where oaks and elms would never grow—at a very trifling outlay.

I cannot dismiss Dropmore without mentioning a superb hedge of Portugal laurel, thirty-one feet high—and the beautiful "Burnam beeches," almost as fine as one ever sees in America, that I passed on the way back to the rail-way station.

The last word reminds me that I must say a word or two here, about the English railways. In point of speed I think their reputation out-runs the fact. I did not find their average, (with the exception of the road between Liverpool and London,) much above that of our best northern and eastern roads. They make, for instance, hardly 20 miles an hour with the ordinary trains, and about 36 miles an hour with the express trains. But the perfect order and system with which they are managed; the obliging civility of all persons in the employment of the companies to travellers, and the quietness with which the business of the road is carried on, strikes an American very strongly. For example, suppose you are on a railroad at home. You are about to approach a small town, where you may leave and take up, perhaps, twenty passengers. As soon as the town is

in sight, the engine or its whistle begins to scream out—the bell rings—the steam whizzes—and the train stops. Out hurry the way passengers, in rush the new comers. Again the bell rings, the steam whizzes, and with a noise something between a screech and a yell, but more infernal than either—a noise that deafens the old ladies, delights the boys, and frightens all the horses, off rushes the train—whizzing and yelling over a mile or two more of country, before it takes breath for the like process at the next station.

In an English railway you seldom hear the scream of the steam whistle at all. It is not considered part of the business of the engineer to disturb the peace of the whole neighborhood, and inform them that he and the train are coming. The guard at the station notices the train when it first comes in sight. He immediately rings a *hand-bell*, just loud enough to warn the passengers in the station, to get ready. The train arrives—no yelling, screaming—or whizzing—possibly a gentle letting off of the steam—quite a necessary thing—not at all for effect. The passengers get out, and others get in, and are all carefully seated by the aforesaid guard or guards. When this is all done, the guard of the station gives a tinkle or two with his hand-bell again, to signify to the conductor that all is ready, and off the train darts, as quietly as if it knew screaming to be a thing not tolerated in good society. But the difference is national after all. John Bull says in his railroads, as in everything else, "steady—all right." Brother Jonathan, "clear the the coast—go ahead!" Still, as our most philosophical writer has said, it is only boys and savages who scream—men learn to control themselves—we hope to see the time when our people shall find out the advantages of possessing power without making a noise about it.

If we may take a lesson from the English in the management of rail-ways, they might learn vastly more from us in the accommodation of passengers. What are called "first-class carriages" on the English rails, are thoroughly comfortable, in the English sense of the word. They have seats for six—each double-cushioned, padded, and set off from the rest, like the easy chair of an alderman, in which you can entrench yourself and imagine that the world was made for you alone. But only a small part of the travel in England is in first-class cars, for it is a luxury that must be paid for in hard gold—costing four or five times as much as the most comfortable travelling by railroad in the United States. And the second class cars—in which the great majority of the British people really travel—what are they? Neat boxes, in which you may sit down on a perfectly smooth board, and find out all the softness that lies in the grain of deal or good English oak—for they are guiltless of all cushions. Our neighbors of this side of the Atlantic have been so long accustomed to catering for the upper class in this country, that the fact that the railroad is the most democratic institution of the day, has not yet dawned upon them in all its breadth. An American rail-car, built to carry a large number in luxurious comfort, at a price that seems fabulous in England, pays better profits by the immense travel it begets, than the ill-devised first and second-class carriages of the English rail-ways.

But what finish and nicety in these English roads! The grades all covered with turf, kept as nicely as a lawn, quite down to the rails, and the divisions between the road and the lands adjoining, made by nicely trimmed hedges. The larger stations are erected in so expensive and solid a manner as to have greatly impaired the profits of some of the roads. But the smaller ones are almost always built in the style of the *cottage ornee*—and, indeed, are some of the prettiest and most picturesque rural buildings that I have seen in England. They all have their little flower-gardens, generally a parterre lying open quite to the edge of the rail, and looking like a gay carpet thrown on the green sward. If the English are an essentially common sense people, they, at least, have a love of flowers in all places, that has something quite romantic in it.

I reached London only to leave it again in another direction, to accept a kind invitation to the country house of Mrs. —— the distinguished authoress of some charming works of fiction—which are widely known in my country, though I shall not transgress English propriety by giving you a clue to her real name.

This place reminded me of home more than any that I have seen in England; not, indeed, of my own home in the Hudson highlands, with its bold river and mountain scenery, but of the general features of American cultivated landscape. The house, which is not unlike a country house of good size with us, is situated on a hill which rises gently, but so high above the surrounding country, as to give a wide panorama of field and woodland, such as one sees from a height about Boston and Philadelphia. The approach, and part of the grounds, are bordered with plantations of forest trees, which, though all planted, have been left to themselves so much as to look quite like our native after-growth at home. The place, too, has not the thorough *full-dress* air of the great English country places where I have been staying lately, and both in extent and keeping, is more like a residence on the Hudson. The house sits down quite on a level with the ground, however, so that you can step out of the drawing-room on the soft grass, and stroll to yonder bright flower-garden, grouped round the fountain dancing in the sunshine, as if you were only going out of one room into another. In the library is a great bay-window, and a spacious fire-place set in a deep recess lined with books, suggesting warmth and comfort at once, to both mind and body; and the air of the whole place, joined to the unaffected and cordial welcome from many kind voices, gave me a feeling of *maladie du pays* that I had not felt before in England.

There are no especial wonders of park or palace here, though there is a great deal of quiet beauty, and as I have, perhaps, given you almost a surfeit of great places lately, you will not regret it. I look out of the windows, however, and see in abundance here, as every where, those two evergreens that enrich with their broad glossy leaves, all English gardens and pleasure grounds, and which I never cease to reproach for their monarchical habits—since they so obstinately refuse to be naturalised in our republic—I mean the English and the Portugal laurels. I would give all the hot-house plants that Yankee glass covers, to have these two evergreens as much at home in our pleasure-grounds as they are everywhere in England.

There are other guests in the house—Sir Chas. M——, Lady P., some Irish ladies without titles, (but so rich in natural gifts as to make one feel the poverty of mere rank,) and a charming family of grown up daughters. It would be difficult, perhaps, to have a better opportunity to judge of the life of the educated middle class of this country, than in such homes as this. And what impressions do such examples make upon my mind, you will ask? I will tell you, (not without remembering how many fair young readers you have at home.) The young English woman is less conspicuously *accomplished* than our young women of the same position in America. There is, perhaps, a little less of that *je ne sais quoi*—that nameless grace which captivates at first sight—than with us, but a better and more solid education, more disciplined minds, and above all, more common sense. In the whole art of conversation, including all the topics of the day, with so much of politics as makes a woman really a companion for an intelligent man in his serious thoughts, in history, language, and practical knowledge of the duties of social and domestic life, the English women have, I imagine, few superiors. But what, perhaps, would strike one of our young women most, in English society, would be the thorough cultivation and refinement that exist here, along with the absence of all false delicacy. The fondness of English women, (even in the highest rank,) for out-of-door life, horses, dogs, fine cattle, animals

of all kinds,—for their grounds, and in short every thing that belongs to their homes—their real, unaffected knowledge of, and pleasure in these things, and the unreserved way in which they talk about them, would startle some of my young friends at home, who are educated in the fashionable boarding-school of MADAME ——, to consider all such things "vulgar," and "unlady-like." I accompanied the younger members of the family here this morning, in an exploration of the mysteries of the place. No sooner did we make our appearance out of doors, than we were saluted by dogs of all degrees, and each had the honor of an interview and personal reception, which seemed to be productive of pleasure on both sides. Then some of the horses were brought out of the stable, and a parley took place between them and their fair mistresses; some favorite cows were to be petted and looked after, and their good points were descanted on with knowledge and discrimination; and there was the *basse cour*, with its various population, all discussed and shown with such lively unaffected interest, that I soon saw my fair companions were "born to love pigs and chickens." I have said nothing about the garden, because you know that it is especially the lady's province here. An English woman with no taste for gardening, would be as great a marvel as an angel without wings. And now, were these fresh looking girls, who have so thoroughly entered into these rustic enjoyments, mere country lasses and dairy maids? By no means. They will converse with you in three or four languages; are thoroughly well-grounded in modern literature; sketch from nature with the ease of professional artists, and will sit down to the piano-forte and give you an old ballad, or the finest German or Italian music, as your taste may dictate. And yet many of my young country-women of their age, whose education—wholly intended for the drawing-room—is far below what I have described, would have half fainted with terror, and half blushed with false delicacy, twenty times in the course of the morning, with the discussions of the farm-yard, meadow and stables, which properly belong to a wholsesome country life, and are not in the slightest degree at variance with real delicacy and refinement. I very well know that there are many sensibly educated young women at home, who have the same breadth of cultivation, and the same variety of resources, that make the English women such truly agreeable companions; but alas, I also know that there are many whose beau ideal is bounded by a circle that contains the latest fashionable dance for the feet, the latest fashionable novel for the head, and the latest fashionable fancy work for the fingers.

If I have unconsciously run into something like a sermon, it is from the feeling that among my own lovely country women is to be found the ground-work of the most perfectly attractive feminine character in the world. But of late, their education has been a little vitiated by the introduction of the flimsiest points of French social requirements—rather than the more solid and estimable qualities which belong to English domestic life. The best social development in America will, doubtless, finally result from an internal movement springing from the very bosom of our institutions; but before that can happen, a great many traits and refinements will necessarily be borrowed from the old world—and the larger interests, healthier home tastes, and more thorough education of English women, seem to me hardly rated so highly by us as they deserve. Go to Paris, if you will, to see the most perfect taste in dress, and the finest charm of merely external manners, but make the acquaintance of English women if you wish to get a high idea of feminine character, as it should be to command your sincerest and most lasting admiration and respect.

A. J. D.

Hertfordshire, Sept., 1, 1850.

RAISING PEAS—KITCHEN-GARDEN TALK.

BY AN OLD DIGGER.

"THIS is one of those vegetables," said COBBETT, "which all men most like." You know there is not a tolerable kitchen-garden in all Europe or North America, where peas are not cultivated, so it is worth while to ask a neighbor what are the best sorts, and how to cultivate them? For all peas are not alike—some are dry and insipid, while others are tender and sugary.

Well, there are a dozen or twenty sorts of peas, and you may find half the latter number in almost any large seed store. But many of them are only second rate, and, of course, you waste your garden space in planting second rate sorts. What you do want, is the very best early pea; the best succession pea, and the best late pea. For with these, supposing you plant all three sorts about the same time, they will come in so as to keep your table in peas till August. After that, if you are as fond of peas as I am, you will provide a second crop, or rather a couple of second crops of the early pea, for September and the early part of October, by sowing them again about the middle of August.

For the spring crop, you should commence sowing peas as soon as the frost is out of the ground—even it be the first of March, (or a month earlier at the south,) for peas are not tender chicks, like most other vegetables, being not a whit injured by a few very frosty nights, even when they are several inches high. If you have a warm sheltered piece of ground, on the south side of a fence or building, where you can plant a couple of drills as soon as the ground is mellow, then you will get the start of your neighbors who plant in the open garden—for the pea is easily coaxed forward by keeping the cold winds away from it. But much the best way of raising a *very* early crop of peas, if you like to get ahead of the season a little, is that described in the Horticulturist, vol. 1., p. 481, which I have tried for several years. I find, following out that plan, with very little trouble I can gain ten days over most of my neighbors, who have the sharpest gardeners, if they trust entirely to what can be done in the open air. You tack these troughs loosely together, so that the nails can be easily drawn; you nearly fill them with good soil, planting a drill of peas in them, in the usual way, and you set them in any rough frame, (without dung or bottom heat.) This you must contrive to cover with sashes of some sort—or if you have no sashes, then with frames covered with cheap cotton, coated over with a little oil, to make it partly transparent. With such a frame, set in a sunny place, and covered with cotton stuff or sashes, you begin to start peas by the middle of February, or, if the season is late, the first of March. When they are about three or four inches high, and the season grows mild, you make a furrow in the kitchen-garden, set the troughs in the furrow: draw the nails; lift out the boards, pressing the earth gradually in their place, and then you have peas ready to stick when your earliest planting in the open ground is just breaking through the soil. The peas transplanted from the troughs in this way, don't know that they have been moved at all, and grow on, settling themselves as if they had been sown there, and had a "pre-emption right" to the ground.

Not much needs to be said about the soil for peas. They like a good soil, but the early sorts will grow on almost any land that can be dignified with the name of a garden. But if you look for rapid growth and good crops, your soil must be kept in good heart, for

peas, as well as for every thing else, and the best way to do this is to *ridge up* the ground in the fall, after all the crops are taken off, digging-in *a good dressing of fresh stable-manure* when you are throwing it up into ridges. If this has not been done, and still here you are at the beginning of March, with spade in hand, and a bag of peas for planting lying before you, you must make the most of it for the time. If your garden is rich, this will be done by marking out the drills, and sprinkling along them a light dressing of leached ashes, (about half as much as will fairly hide the soil in the drill,) covering this with a little soil, and planting the peas upon that. If your soil is poor, dig in a good dressing of any manure you can get—even fresh stable manure—over the whole ground, before you plant the peas. Or, if manure is scanty, then mark out the drill, lay a dressing of manure upon it, and turn it under half a spade deep—smoothing all, and planting over the manured furrow in the common way.

"And what is the common way," somebody asks who never planted a pea in his life. It is as simple as ruling a copy book. You have only to mark off the newly dug ground into straight lines, (two and a-half feet apart, if you are planting early peas, or three and a-half if late ones,) open a drill about an inch deep, with a hoe, along these lines. Then drop the peas in this drill, about an inch apart. Some persons plant only a single line of peas in the drill, others make the drill as broad as the blade of the hoe, and scatter the peas an inch apart throughout the whole—and I recommend the last way as giving the largest crop. Of course, you must have such a thing as a garden line, to make a *straight* drill—for straight lines in the kithen-garden give it as much a look of neatness and order, as they do in the copy book. Having covered the peas, by drawing over them with the hoe all the earth that you pushed aside to make the drill, you have nothing to do but wait till they come up. When they have grown four or five inches high, and begin to put out their little feelers, or tendrils, you must provide something for them to catch hold of, either in the way of sharpened sticks, usually called "pea brush," or by stakes driven down every ten or fifteen feet on each side of the drills, with lines of twine stretched from one to the other. Either makes a good support, but the branchy pea-brush is the best, because the most like nature's way of allowing vines to run over a bush. When you stick the peas, you must loosen the soil well, and draw a little up on each side, to help keep up the vines.

No doubt you expect me to tell you which are the very best peas for your own garden, for you have been puzzled, I dare say, by the many new and old names that you see in the seedsmen's catalogues. I will be glad to do this, for I have tried many of them, and am content with *three ;* which, indeed, I think will give you the topmost flavor of this vegetable, as well as the most reliable and surest crops.

First then, *Prince Albert*, for the best *early* pea; second, the *Champion of England*, for the best large pea; and third, *Knight's Tall Marrow*, for the best summer crop.

Prince Albert is a variety of the old "Early Frame," or "Early Washington," of the same habit and flavor, (but rather more dwarf,) decidedly earlier, and I think a better bearer. At any rate, after trying it along side of the Early Frame, and Early Charlton, Cedo Nulli, and four or five others, for three years, I have given up all others as supplanted by the Prince Albert—now pretty generally admitted to be the best early pea.

Champion of England is a first rate marrowfat pea—the best of its class—and the very best large pea—tender and very sugary. It grows about three and a-half to four feet high, is a fine healthy plant, and bears most abundant crops. Planted at the same time as the early peas, it is fit to gather about three or four weeks later. The very large peas it bears are slightly shrivelled, and of a bluish cast in the dry state. If you are to have but two peas, this and the Prince Albert are the sorts for your money.

Knight's Tall Marrow, is the best of the tall late peas, bearing a long time, and giving a good crop. It is some objection to this sort, that it grows six feet high, and requires more room and pains in staking, than *Knight's Dwarf Marrow*, but it is a better and more prolific pea in strong soils. I am content with the *Champion of England*—a pea of the same class, and, therefore, should only cultivate this for variety, and for its being a little later. The Waterloo is something like it, but no so good.

Every body knows how to cook peas, or at least every body thinks so—and every body *boils* them. That is excellent, but by no means the only way to taste this vegetable in perfection; an Old Digger may not be supposed to know much about cooking, but in fact no place lies so close to the kitchen as the kitchen-garden, and it must be a dull digger who does not know something of what the cook does with his "truck." So I will tell you that the neatest little dishes that any cook ever sends to the table, are very small joints of lamb or veal, or perhaps a pair of spring chickens, *stewed* in a close pot or stew-pan very gently, over a slow fire, for two or three hours, till quite done, *with peas;*—butter, pepper, and salt, being added, of course. The juices of the meat penetrate the peas, and the flavor of the peas is given to the whole dish, so that I doubt if there was more savory dishes among the flesh-pots of Egypt, than one of these stews. These are the dishes for the dinners of small families, instead of the eternal steaks and cutlets, more than half of the time *fried* instead of broiled, that stare us in the face, "year in and year out," and which nobody can eat for a long time, without a fit of indigestion, unless it be some one who lives out of doors pretty much the whole time, and becomes as hardy as,

Yours, AN OLD DIGGER.

Horticultural Societies.

MASS. HORT. SOCIETY.—At a recent meeting of this Society, Mr. Cabot, from the committee for establishing premiums for 1851, reported a list amounting to $2,200, which was adopted and ordered printed. From this list, we select the following "Prospective Prizes," for objects to be originated subsequent to 1846, and which, after a trial of five years, shall be deemed equal or superior in quality and other characteristics, to any now extant.

For the best seedling	
Pear, the Society's large Gold Medal	$60
Apple, do do do	60
Hardy Grape, do do	60
Plum, the Appleton Gold Medal	40
Cherry, the Lowell Gold Medal	40
Tree Pæonia, the Appleton G. M.	40
Herbaceous Pæonia, the Lowell G. M.	40
Potato, the Society's large Gold Medal	60

After a trial of three years.

For the best seedling	
Strawberry, the Lyman Plate	$50
Raspberry, the Bradlee Medal	40
Hardy Rose, large Gold Medal	60
Camellia Japonica, do	60
Azalea Indica, Lowell Gold Medal	40
Blackberry	40
Gooseberry	30
Currant, red or white	30

ALBANY AND RENSSELAER HORT. SOCIETY.—The society met at the State Agricultural Rooms, Feb. 6, V. P. DOUW, President, in the chair.

The Treasurer made his annual report, which was referred to a committee consisting of Dr. Herman Wendell and Mr. James, who reported the account correct.

Messrs. Tucker, Prentice, Menand, Dorr and Kirtland, were appointed a committee to nominate officers, who reported the names of the following gentlemen, who were elected:

President—VOLKERT P. DOUW, Wolvenhook.

Vice-Presidents—Herman Wendell, M. D., Albany; D. Thomas Vail, Troy; E. P. Prentice, Mt. Hope; William Newcomb, Pittstown.

Secretary—B. P. Johnson, Albany.

Treasurer—Luther Tucker, Albany.

Managers—B. B. Kirtland, Greenbush; J. M. Lovett, Albany; L. Menand, Watervliet; S. Morgan, Guilderland; J. S. Goold, Albany; J. McD. McIntyre, Albany; W. A. McCulloch, Greenbush; James Wilson, Albany; E. Dorr, Albany.

Committees for 1850.

Fruits.—Dr. Herman Wendell, Albany, chairman. V. P. Douw, Greenbush; E. Dorr, Albany; B. B. Kirtland, Greenbush; D. T. Vail, Troy.

Green-house Plants and Green-house Flowers.—Wm. Newcomb, chairman. J. H. Willard, Troy; J. S. Gould, Albany; W. A. McCulloch, Greenbush; William Janes, Bethlehem.

Gardens.—Luther Tucker, chairman. B. T. Cushman, Troy, and C. P. Williams, Albany.

Flowers.—Sanford Howard, Albany, chairman. E. N. Pratt, Greenbush; J. McD. McIntyre, Albany; E. Corning, jr., Albany; A. March, M. D., Albany.

Floral Designs, Bouquets, Ornaments, &c.—Stephen E. Warren, Troy, chairman. J. M. Lovett, Albany; Jefferson Mayell, Albany; T. C. Abrams, West Troy.

Discretionary Premiums.—E. P. Prentice, Bethlehem, chairman. D. T. Vail, Troy; Wm. Cooper, Guilderland; Jacob Henry, Watervliet; E. E. Platt, Albany.

Essays and on Establishing Synonyms of Fruits.—Dr. E. Emmons, Albany, chairman. Amos Briggs, Schaghticoke; Sanford Howard, Albany; John H. Willard, Troy; A. T. Richards, West Troy.

Vegetables.—R. F. Johnstone, Albany, chairman. Dennis Belden, Troy; Dr. John Wilson, Bethlehem; Samuel Morgan, Albany; Wm. S. Shepard, Watervliet.

Arrangements for Exhibitions.—J. McD. McIntyre, Albany, chairman. Sanford Howard, Elisha Dorr, J. Dingwall, Albany, D. D. T. Moore, Watervliet; William Thorburn, James Wilson, Erastus H. Pease, Albany.

GENESEE VALLEY HORTICULTURAL SOCIETY.—At the annual meeting of this Society, held at Rochester on the 3d Feb., Jason W. Seward, Esq., was appointed chairman, in the absence of the president.

The minutes of the last annual meeting were read and approved. The report of the Treasurer was also read and approved, showing a balance in his hands at the close of the year of fifty-six dollars. The Society then proceeded to the election of officers and committees for the ensuing year, whereupon the following gentlemen were elected:

President—LEVI A. WARD, Rochester.

Vice Presidents—Mathew G. Warner, Rochester; Henry P. Norton, Brockport; J. J. Thomas, Macedon; Asa Rowe, Sweden; S. Donallan, Greece.

Cor. Sec'y—Dellon M. Dewey.

Rec. Sec'y—J. A. Eastman.

Treasurer—James H. Watts.

Committees.

Fruits.—Patrick Barry, M. G. Warner, J. W. Bissell, Samuel Moulson, Alonzo Frost, Jas. Buchan, John J. Thomas, Jas. C. Campbell, Elias Pond, Isaac Hills, W. R. Smith, and L. B. Langworthy.

Trees, Shrubs and Flowers.—Jno. Gray, Jas. M. Whitney, L. Wetherell, Francis Brown, Jr., and H. Billings.

Vegetables.—Jason W. Seward, James P. Fogg, John Rapalje, James Vick, jr., and James Buchan.

Botany.—L. Wetherell, C. P. Dewey, Geo. H. Smith, J. W. Seward, and C. M. Booth.

Entomology.—L. Wetherell, and J. W. Seward.

Executive Committee.—Levi A. Ward, Mathew G. Warner, Patrick Barry, John Grey, Jason W. Seward, and L. Wetherell.

On motion of J. W. Bissell, a committee of six were appointed by the Chairman on the part of the Society, to co-operate with the Executive Committee of the State Agricultural Society in making arrangements for the next State Fair, and especially to arrange the "Floral Hall."

The Chairman announced the following gentlemen as such Committee:

Geo. Ellwanger, J. M. Whitney, H. E. Hooker, C. J. Ryan, Joseph Frost, and R. Donallan.

Mr. J. W. Seward presented specimens of a new variety of Potato, a seedling of Mr. H. N. Langworthy of Irondequoit, which has been very successfully cultivated for market for two or three years past, by Mr. Mandeville, of Irondequoit. After some remarks by Mr. Seward and others, it was referred to the committee on vegetables to give a name to said potato

Mr. J. W. Seward, the special committee appointed at the last annual meeting, for the purpose of procuring members to this society, and soliciting the co-operation of our citizens in its behalf, having made his report, was reappointed as such committee, together with Mr. W. C. Bloss, for the ensuing year.

On motion of Mr. P. Barry, the thanks of the society were presented to Mr. J. W. Seward for his successful efforts as such special committee during the past year.

The thanks of the meeting having been presented to the Hon. Levi A. Ward, for a basket of very fine fruit furnished for the use of the society this evening, the meeting thereupon adjourned. J. A. EASTMAN, Sec'y.

HORT. SOCIETY FOR THE VALLEY OF LAKE CHAMPLAIN.—At a convention held at Burlington last month, a Horticultural Society for the valley of Lake Champlain, was organized, and the following officers appointed:

President—Rev. JOHN WHEELER.

Vice Presidents—David Reed, Chittenden county; Rowland T. Bobinson, Addison co.; M. F. Palmer, Franklin co.; Buel Landon, Grand Isle co.; John W. Baily, Clinton co.; C. M. Watson, Essex co.

Sec'y—Dr. Wm. C. Hickok.

Treasurer—Prof. J. Chaney.

Standing Fruit Committee.—Jonathan Battey, Jasper Curtis, Albert Carpenter, C. Goodrich, Prof. J. Torrey.

Prof. of Botany.—J. Torrey, D. D.

Prof. of Entomology.—Rev. Z. Thompson.

Prof. of Horticultural Chemistry.—Rev. John Mattocks.

Domestic Notices.

Frontispiece—Vinery at Medary.—Our vignette this month, is a very accurate view of the vinery at Medary, the country seat of Harry Ingersoll, Esq., near Philadelphia.

We saw the vinery last autumn, just after its completion, and it struck us that in size and proportion, it might be taken as a *model* for this kind of structure for the amateur's garden, or for a gentleman's residence, where only a moderate supply of grapes is desired—since it would afford without fire heat a sufficiency of delicious foreign grapes for the use of the family. Its light and elegant appearance, and the simplicity and neatness of its construction, recommend it to the eye as an agreeable feature in the fruit-garden.

The plan and construction of this building are substantially that contrived and carried out on a larger scale by Mr. Van Rensselaer, in his vinery at Clinton Point, on the Hudson, and an interior view of which we gave in vol. iv, p. 178.

We add the following note from Mr. Ingersoll, explanatory of its dimensions and exact cost, for the use of any of our readers about building vineries,* and we have the promise of some detailed drawings of another building of this kind near Boston, which we hope soon to present to our readers. Ed.

My Dear Sir—I wish to redeem my promise to give you the exact cost of a moderate sized vinery, on the plan of that of Mr. Van Rensselaer, your neighbor on the Hudson.

The building is 43 feet 6 inches in length, by 18 feet wide, and fourteen feet high.

The materials used by the carpenters, including iron work, cost,	$185 00
Carpenters' labor,	200 00
Glass,	90 00
Painting and materials,	28 00
	$503 00

I may mention that all the materials are the *best* that could be got. And that the work was done by city mechanics at *city prices*.

The cost of making the borders, which are each 18 feet wide by 3 feet deep, according to your instructions, and altogether outside the house, must vary so much that no accurate estimate can be given. Mine cost very little; all the matters, (except the ground bones,) used in them—the leaf mould, decomposed sod, and manure—were collected about the farm; and the labor was done by the gardener and other people at convenient times. Yours sincerely, Harry Ingersoll. *Bristol township, Philadelphia Co., Jan.* 22, 1851.

* A carpenter in our neighborhood offers to contract to build vineries like this for $10 the running foot.

Climbing plants—Golden Trumpet Flower.—I do not agree entirely with your friend the English Landscape Gardener, that we are an ungrateful people—ungrateful for our rich gifts of native trees and plants. We do not plead guilty to ingratitude. Ignorance may be our misfortune, but ungrateful we are not. Show us how we ought to evince our gratitude—point out the object that would not forget the good we bestowed on it—name the individual that would do credit to our adoption; and Americans will be found as ready to bestow on them as high a patronage, and to estimate as highly as the most antique nation under history the duties which that patronage and adoption involved. We do not know what to be grateful for. Let us once understand *that*, and *then* judge us.

The English *ivy* is indeed a noble plant. We have no substitute. There is none. It has a peculiar charm of its own which no other plant possesses. In its historical associations it is unrivalled,—in its poetical expressiveness it has no compeer, and in its relation to all the romantic past, it speaks forth volumes where any other plant would be speechless. Who that has travelled in Europe—no matter how many years may have since elapsed—can look upon an ivy in America without being easily led back in imagination or memory to the old ruined castles, palaces, and abbeys around which gathers the history of those foreign lands? For my part I can seldom look upon the magnificent robe of ivy which envelopes the old dwelling of that great botanist Bartram, (from whence I write these lines,) but I can almost fancy that I see a host of grim warriors in arms

and armour, assembled within its walls, with their high head-dressed dames, in hoops and furbelows, or, with a little more stretch of fancy, see the bare headed and shoeless sons of the cloister assembled to distribute their morning alms in the old front portico. What substitute can replace this? We must first change the whole face of history, before we can answer that. But laying aside its historical, poetical and domestic associations, and taking it up only as a decorative plant, what have we? To place the five leaved or Virginia creeping ivy (*Ampelopsis hederacea*, or *quinquefolia*) in competition with it, is to set off "hoddin gray, and a' that" against "purple and fine linen." The Virginia creeper may *do*—just do, to cover the bare walls of a building,—but as a *substitute* for ivy, no, never! Its bald, cheerless, wintry aspect at a season when the evergreen, rich, warm-looking ivy has its sweetest charms, will ever make the comparison an unfavorable one. I would prefer the Golden Trumpet flower—(*Bignonia capreolata*,) to the Ampelopsis. Being a native of the southern part of Pennsylvania, and of Virginia, it would probably be hardy a considerable degree farther north. It is indeed a beautiful evergreen creeper. Its pendant *secondary* branches are *so* graceful, that I know of nothing to compete with it in its sphere. Those who are unacquainted with this plant cannot conceive how much it deserves to be loved and admired.

The characteristic expression of gratitude and affection for which poets have made the ivy so emblematical—clinging as it does with a feminine fondness to some fatherly oak which supported it in infancy,—and encircling in its arm-like folds the perhaps now decaying form of its early protector—is more appropriate to this plant. Indeed, if I were a poet, I would conjure up in my imagination a grove expressly to introduce it. I would see it running wildly over a rustic bower, now clinging to some rugged grapevine, now sipping with the ends of its drooping branches, the crystal waters of a winding streamlet which should run at its feet. And then its beautiful flowers, like golden cups, which would admit a gaze at them long enough to lead the imagination to the belief that they were the drinking vessels of the fairest nymphs—the dryads of the woods, and the naiads of the stream. If you visit our fair city soon, and have time to make us a visit, I will introduce a specimen of this vine to your notice which shall warrant all that I have said of it. It is not a neglected plant—it is an unknown one. Although described in the oldest books, it is seldom seen. I believe the only plant that ever I saw of it in England was at Col. Vernon Harcourt's in the Isle of Wight, where it was received direct from Montreal with other hardy things in 1838—but I feel assured that I will yet see the day when the Golden Trumpet flower (*Bignonia capreolata*) will be as popular and as common both in this country and in England as the ivy now is—not as a substitute or competitor—for that can never be—but as a comrade and welcome companion. Yours very sincerely, Thomas Meehan. *Bartram Botanic Garden, Philadelphia, Jan.* 10, 1851.

[We saw the very plant of the Golden Trumpet flower which our correspondent describes, 5 or 6 years ago, at the Bartram Garden when it was in full bloom. It was then one of the finest climbers we ever beheld, and we immediately ordered a plant of it for our own garden where it is now growing well. The foliage is evergreen and handsome, but the flowers are not so fine here as in Philadelphia. It is, certainly, a climber worthy of being more generally known. Ed.]

Random Notes of a Winter's Evening.—With the comparative leisure of winter, is it not well to take a retrospective glance at what has been accomplished; to be pleased with what has been well done, and to compare notes of what is in progress—*Horticulturally*, of course—your Journal being the *vade mecum* for that subject.

The season has been one of great fruitfulness; the granaries of the industrious farmer are richly stored with all the cereal and other crops, both in quantity and quality, and the horticulturist's heart has gladdened at the profusion and richness of the bounties set before him. Never, within the recollection of the *oldest inhabitant*, has there been such an universal crop, and so universally well ripened. Strawberries, cherries, peaches, plums, apples and pears, with all the minor fruits and escu-

lents have been excellent; and bating the occasional loss by insect depredations, and a touch of a nameless blight, all have reaped a *quid pro quo* for labor bestowed. For one, I can truly say, that it has been a season of peculiar pleasure and satisfaction, although physical labor has been more severe than for forty years before.

Permit me, in *usus loquendi*, to say a word or two to those who like myself have been

> Pent up in cities' murky gloom,
> Breathing infection,

and to lure them into rural places, where alone can health and cheerful mind attain the acme of God's paradise on earth.

For several years past my passion for gardening has been confined within narrow bounds. Fruits, flowers, vinery and conservatory, have occupied but a few perches of land. Lately, having purchased a suburban residence of some five and twenty acres, within two miles of the city, I have, thanks to a kind providence, learned to walk again—aye, and to work too—enjoying the elastic influences of healthful exercise, with the accessories of a sound and natural appetite. Here we enjoy the luxuries of home-made butter, fresh eggs, wholesome and nutritious vegetables, luscious fruits, and a happy thankfulness that our lot has been thus cast in pleasant places.

My lands had once been in a high state of cultivation, but for some years past most shamefully abused. Burdock, and a host of mongrel grasses, weeds, grubs, &c., had taken possession. The trees were mossy, and had been starved into bare existence. What a picture! and yet, who would not envy my position? Believe me, and I doubt not you would respond to the truth, that to create, to replant, and to rejuvenate such a place, watching grateful earth put forth her latent energies; to guide and direct each branch and twig, and turn the neglected sward into velvet lawn, is productive of far greater happiness to the lover of rural labors, than the possession of a finished place, where nought was left to do.

Most fortunately the soil, which varies from sandy loam to a stiff clay, had never been stirred beyond the depth of a few inches, and my design in these desultory ramblings, is to relate some of my experiments and their results.

Intending to appropriate the larger portion of the plot to fruit culture, the first instrument purchased was a subsoil plow. This tool strikes at the root of all evil, and has, wherever used, done wonders. As Rome was not built in a day—for want of time—neither have I subsoiled all my land; yet desirous of testing the efficacy of each experiment, I applied it to alternate *lands*, and with the aid of the common plow, I have thoroughly worked several acres, from 17 to 20 inches in depth. Thus, with the design of getting the soil in good *heart* and tilth before planting, I put in root and hoed crops.

The surface was manured in this wise:—50 loads stable manure, 10 loads leached ashes, 10 loads limed hair from the tannery, and 100 bushels rectified charcoal per acre—all of which was well and thoroughly incorporated to the depth of eight or ten inches, with a scattering of air slaked lime upon the surface; the latter more particularly to meet the appetite of the grubs. The result has been, that potatoes, corn, cabbage, carrots and oats, were in weight, as two to one in favor of the subsoiled land. These crops never showed the least wilt in drouth, nor lost color until the ripening process.

How little is known of the true value of this limed hair and refuse charcoal—articles readily procured in large quantities, in nearly every town, for the carting, and which are frequently buried in sunken holes to get rid of them. I consider the hair nearly as rich in the same constituents as ground bones, (which, with us, are very expensive,) containing largely, nitrogen and ammonia, besides being rich in phosphates, and withal readily decomposing, not a vestige being left in its former state at the close of a season. For grape and fruit culture generally, it is invaluable.

Of charcoal, enough has been said through the pages of the *Horticulturist*, to assure the most skeptical of its intrinsic virtue. But, says a novice, *your* charcoal is ruined by the uses to which it has been applied; in rectifying spirit, it is so perfectly changed by the absorption of the essential oil, that it has lost all power of farther absorbtion as a deodoriser? This is nonsense in the extreme. Charcoal is indestructible nearly, and loses none of its valuable properties to the gardener by such use. With

experiments in disinfecting night-soil, and fetid chamber slops, in warm weather, I find it puts a *quietus* upon the odors most perfectly—and for this purpose fully equal to fresh burned coal. Try it, ye skeptics, who profess to delight in rich foliage and luxuriant growth.

Wood ashes, leached or fresh, is another invaluable auxiliary to the tiller of the soil; and remarkable is it, that the farmer and gardener will, even now, sell his ashes at a few cents a bushel, in exchange for soap, at a loss of a thousand per cent! As a single fertilizer for tree culture, it is the most valuable of any.

In my orchard of an hundred rather old apple trees, whose beauty had departed, and whose fruit was bitter, and miserably poor, I have already wrought a favorable change. Around each tree the soil has been trenched, two feet deep by two feet wide, at from six to eight feet from the bole; the roots cut off smoothly with a well ground spade, and the trench filled with a compost of chopped sod, hair, leached ashes and chip manure, well incorporated, scattering the soil taken out upon the surface. The trees were then somewhat pruned and grafted; the loose bark and moss carefully scraped away, and a wash of whale oil soap, sulphur and sand, put freely upon them. The grafts took well; the trees put on a new dress, and already have they assumed a healthful vigor. What they will attain by another season's growth, we can readily imagine. This orchard was well manured, deeply plowed, and put into potatoes which turned out well.

An experiment made here, with salt, in potato culture, may be useful to record: It has been contended that common salt, both was, and was not, valuable to the growth of this crop. I experimented somewhat largely, and offer the results:

Upon 100 sets, I placed directly in the hole, when planting, a gill of common salt, which killed about fifty per cent. To another 100 sets half a gill; all came up and grew. Upon another 100 sets none; the tubers and haulm showed no observable difference among the different lots. To another 100 sets that were treated each with half a shovel full of leached ashes, a marked difference was readily seen; they were not more vigorous, but better colored, and yielded better. As connected with this experiment I would remark that *flat* hoeing, and not hilling *up*, is far preferable for this, and all other crops requiring regular moisture at the roots; indeed, it is one of the most mistaken dogmas of the age, that garden beds are universally made high, and curved, or rounded on the surface, and the paths or walks left sunken, when in truth, the reverse should be the case. Our summer showers are few and far between, and should be carefully caught upon the spot where they fall, instead of allowing them to wash the surface of its fertility, to be carried by the *paths* to some neighboring brook, or, perchance, enrich some neighbor's low land. In evidence of this, I would adduce the fact, well known to observing persons, that the soil under a tree of ten or more inches in girth, is never moistened beyond a few inches in depth, from the middle of May to September, that is from the opened leaf to the *fall rains*. Is it not reasonable then, that in our climate we have no spare moisture. Did I dare offer an immature opinion, I should attribute to this fact the blight of pear trees, &c. In the observations I have made, the trees thus affected have in all cases been in a light porous or shallow worked soil, and affected at a time when evaporation is at its greatest point, the roots having exhausted the surrounding moisture in greater ratio than the supply. In deep and well trenched soil, with a suitable *mulch*, I have never yet seen a blight.

Pear *seedlings* in our neighborhood are generally considered a failure, losing their foliage early and suffering greatly from blight—while mine, on the contrary, grown on subsoiled land, well dressed with ashes, hair and scoriæ have flourished finely, ripening well their wood, and had not, up to the 5th of December shed their leaves. They were then covered by a heavy fall of snow. Of several hundred pears from the yearling to the bearing, which I planted early in the spring in similarly prepared land, each having a mulch of spent tan, not an instance of blight has occurred; while a neighbor is deeply sorrowing the loss of *forty* beautiful trees. It may, I feel assured, be a settled axiom, that the pear can not be successfully grown on light soils, neither will they thrive without that specific aliment, well incorporated in the soil, which goes to make up the wood.

Vegetable physiology fully demonstrates this, and from it we may learn that all *high bred* and hybrid plants require a greater degree of care in their culture, which includes both food and pruning. In especial evidence we might adduce the foreign grape, the strawberry, and the modern pear, which, under the management of different individuals, even in the same locality, show as great dissimilitude as it is possible to conceive.

While on the subject of pears, may I ask you, or your correspondents to settle the disputed question of legitimate Quince stocks—*must* they as a *sine qua non*, be of the *Angers*, upright, pear, Portugal or orange variety? Pray clear up this matter—as I design to plant yet some two thousand more dwarfs, I feel some interest in the solution.

A portion of my plantation consists of an hundred cherries, mostly beginning to bear; and also an acre of strawberries, among which, are the famous *Scheneike* seedlings.

Peaches in our locale, in open position, are a doubtful crop, and yet in many of our city gardens—warm, and sheltered, fine specimens are annually grown. Having a soil peculiarly adapted to the peach (an old sod sandy loam on a limestone rock) and elevated beyond any adjacent point for several miles, I have thought it worth the experiment, to plant seventy-five trees, of the hardy varieties; selecting those on plum stocks, as vastly better suited to our climate, aside from the protection by this means, from the peach worm. Ashes, lime and hair are my specific fertilizers for this fruit—I give a shovel full of each, well incorporated in the hole, with an additional shovel full of ashes and charcoal as a top dressing, and finish by raising a mound a foot high as a stay for winter blasts, and the depredations of field mice.

How unfortunate it is that nurserymen in packing this tree, so perfectly denude them of their lower branches; these, to me, constitute their best portions, to renew which, requires severe heading back. The peach to be successfull, should be kept low, and bush like. They then shade the ground, answering the purpose of a mulch. The stocks are thus kept free from gumming, are easily reached for summer pruning, and the fruit is readily gathered.

Of plums I am planting an hundred trees, notwithstanding the hue and cry about the curculio. In this matter I have had some experience, and with all due deference to the "*instincts*" your correspondents so kindly speak of, I claim to have the secret of success! For ten years, I have tried with faithful care, the various recipes promulged, such as sulphur, salting, picking up, dung heaps, strong odors, and lastly *manipulation* (the grand secret,) viz: catching all the *he ones* and shortening the proboscis. From half a dozen trees, planted fifteen years ago, full half a mile from any other, and yearly loaded with fruit to be consigned to the piggery, I have by my method, for several seasons past, obtained annually, fifteen bushels of perfect fruit. That this insect is migratory, and fleet of wing, there can be no doubt, and neither is their presence confined to plum trees. I have found them in the woods in great abundance, on the Manitou Islands in Lake Michigan, and other places where no plums are to be found. The paving process is a failure, the trees to over-hang water an absurdity–and although catching them may seem a "*puttering*" job, let me assure you it is a safe one, productive of much fruit. My method has been from the setting of the blossom, to spread sheets under the tree, and jar and shake, with a properly arranged hooked pole. This should be done early in the morning about sunrise, and continued at frequent intervals, say three or four times per week, until the fruit is ripening, when *instinct* tells the creature (should there be any left) that it is too late to penetrate the pit. To induce watchfulness I have paid a penny each, and frequently have they been captured in the act of puncturing the fruit. Occasionally from forty to fifty were caught per day, and yet even at these prices I have been the gainer, as the fruit, from the general scarcity, would readily command from three to four dollars per bushel.

Hedging in this vicinity is almost unknown, if we except the Privet, which is only suitable to define paths, or form screens around buildings.

Hedges proper, however, should be formed of that material which shall fully answer the double purpose of fence and durability—creating a perfect barrier against man and beast, and which shall be ornamental, free from diseases,

and the attacks of animals and insects. These are highly important considerations—and to me peculiarly so. At the present I am trenching for three hundred rods of hedge. The Osage Orange is my favorite, but I fear its durability for that purpose in our neighborhood. Of several hundred plants which I grew from seed, and bestowed upon friends in this vicinity, I find them, as also my own, more or less winter killed when unprotected, besides being subject to girdling by field mice, of which we have more than a share. It makes, however, the most beautiful hedges, in every point of view, far handsomer where it flourishes, than England's Hawthorn, which fades under our bright sun. The Berberry has been highly spoken of for hedging, but not having seen either hedge or testimony, sufficiently satisfactory, I remain in doubt. A *side* nurseryman last year advertised largely, a stock of this plant for hedging, but sending an order at once, for a thousand plants, they were all *just gone!*

Some years since, I induced a friend to try the indigenous thorn so common in our woods. Nearly half a mile of hedge was made, and does pretty well, but due care was not taken in selecting the plants sufficiently small. The larger ones being stunted by transplanting, gaps were made difficult to repair. Thus, after all that has been written on the subject, safety seems confined alone to the Buckthorn. Your own testimony has resolved me to plant largely of it. I had feared that animals would browse upon it, but you say, vol. 1, p. 348, "its leaf and bark are offensive to insects, and the borer will not touch it", which I trust may be extended to graminivorous animals.

A thoroughly protective hedge, or an uncouth looking strong fence, is absolutely necessary to the orchardist, if he may derive either pleasure or profit from his trees. Climbing a a fence, or pushing aside a picket, and pelting the choice apples, pears, &c. from the trees, is, I am sorry to say, not considered generally a misdemeanor, or theft, at the present day. And a peremptory order to desist such intrusion, brings upon the owner the anathema of "how *mean!*" The venerable D. Thomas remarks, "no insect, no birds and no malady among fruit trees have discouraged pomologists so much as the depredations of our own species," and as an antidote urges "that all persons should be induced to grow their own fruit, as he never knew a boy to steal fruit, whose father raised fruit himself," to which we would respond Amen. W. R. Coppock. *Longsight Place, near Buffalo, N. Y., Jan.* 1, 1851.

Notes of the Season.—The new year opened with fine sleighing, a cool healthful air, and smiling, but not a very warm sunshine. The southern sky looked soft and agreeable enough for September, in the early part of the day, but before night, the north wind arose, and the loose snow was hurried in wild confusion into drifts. The morning of the 2d, was cool, and as some would say, the air was fine and bracing through the day—5th, mercury at sunrise, only 2° above 0, and did not rise higher than 10° through the day—6th, 22° at sunrise, and reached 40° in the afternoon. On the morning of the 8th only 2° above 0, but moderates fast and continues very fine for ten days, the mercury frequently being above freezing at sunrise. On the morning of the 19th, it stood 4° below 0, and rose only to 18° above through the day; after which it continues mild and agreeable. The 23d was a fine smoky day, and the snow wasted under the influence of the sun. The morning of the 24th was noted for a remarkable white frost, which curiously ornamented the spires of grass and branches of trees, especially on lowlands, beside streams, where the feathery chrystals hung in rich and varied beauty, and gave under the influence of the sun a fairy appearance to the desolations of winter. But the illusion soon melted off, and we found winter yet reigning in its every day costume. Warm weather followed this frost, and in the four following days, the sleighing was nearly used up by sunshine. The morning of the 29th was ushered in by a rain storm with the mercury at 38° and the wind blowing fresh from the south-west. Wind changes to northwest at 8½ o'clock A. M., and a furious snow-squal follows, continuing until nearly noon. The weather grows blustering through the day. The 30th will long be remembered as a cold, blustering day, made still more unpleasant by the sudden change of temperature. At sunrise the mercury was 8° below 0—at 9 A. M. 6° below—at 3 P. M. 2° below—

at 9 P. M. 9° below, exposed to the full force of the wind. On the morning of the 31st it was 9° below 0—at 9 A. M., at 4 below—at 3 P. M. 4° above 0. It is a very unusual circumstance, and one which I do not recollect to have witnessed before, to experience a temperature below 0 through the day, but here it actually continued for at least 36 hours.

The storms of the month have been few and comparatively light. On the 4th, snow fell to the depth of four inches. On the 9th rain and hail ½ inch. On the mornings of the 16th and 17th, fog rested on the hills and we had very slight sprinklings of rain. The 20th brought a slight fall of snow, and another the 22d. Snow fell to the depth of 1½ inch on the 27th, and the rain of the 29th, was two inches and the snow that followed gave 3 inches. These were all the storms of the month. There were three days only of entire cloudiness—of entire clearness none. In 124 observations the course of the wind was northerly 64—southerly 60.

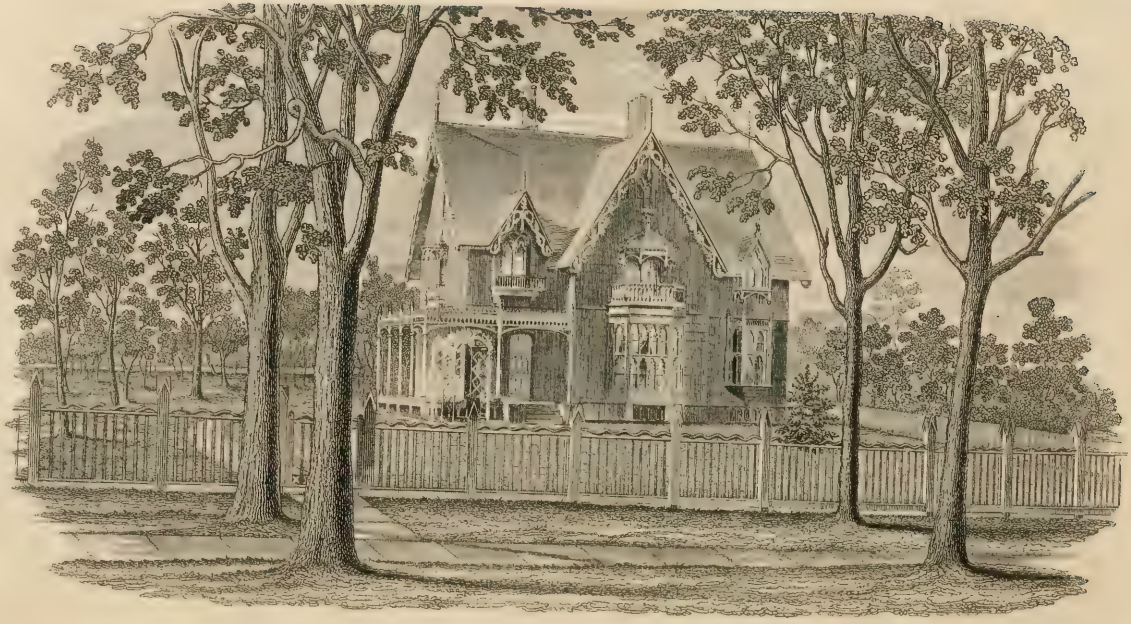
The general temperature of the month was mild and agreeable, and until the sudden change of the 29th, was highly favorable for the fruit buds of the peach, &c. But when we saw the mercury sink 46° in twenty-four hours we must necessarily conclude that it is all over with them for the present year. Such changes are far more fatal in their effects than steady, uncompromising cold weather. This any individual may see from his own liability to take severe colds, contract lung-fevers and other diseases incident to frequent and severe changes of temperature.

Such changes are greatly injurious to domestic animals of all kinds and under the most favorable circumstances, but they are most keenly felt for those which are allowed to shift for themselves in getting protection. How much is suffered by animals and actually lost to farmers by negligence in providing shelter cannot be known. It is no doubt the case, however, that diseases are often contracted by such exposures which are not fully developed until the warm season, and then are attributed to wrong causes. It is certainly a wise policy for farmers to provide good and comfortable shelters for all their animals, and then see that they are housed through the storms, let their mildness promise ever so favorably, for a righteous man will surely regard the comfort as well as the life of his beast. Yours truly, W. Bacon.

Random Notes.—I was much pleased with the communication from your new correspondent Mr. French, and hope he may write often, as it will add considerably to the interest of the Horticulturist. Is there no way to induce "Jeffries" to resume his pen? I feel quite grieved at losing his pleasant criticisms, and have no doubt it would be pleasant to a great many to meet with them again. "W. H." seems to be quite in despair about his plums as well as myself, but I intend planting some where the fowls will have free acess to them, and see what that will do. I hope the "Stowell" sweet corn will soon get far enough south to reach us. It must be a very desirable variety.

Mrs. Bateham's remarks were well worth a place in the Horticulturist, and it is to be hoped they may do good. What a blessing it would be to the country if we had many more of such sensible women. I should like to see a piece of poetry by Mary Howitt, "on the use of flowers," in your columns, as it well deserves a place, but do not like to send it without knowing whether it would be acceptable or not.

We wish to plant two trees in front of our house (a western exposure) that will soon make a shade, and such as are not liable to be attacked by insects. Would not the sugar maple be suitable?—[very suitable.] We have a good many fine roses in an open space in front of our dwelling, but they do not grow as I could wish. What kind of manure had I better apply? The soil is rather light, and I suppose not as rich as it ought to be. [Well rotted stable manure—bury it as deep as you can.] I have succeeded better in raising the Oleander, Azalea, and Daphne from cuttings by placing them in vials of rain water, excluding the air with raw cotton, and keeping them in the window, than in any other way; of course we keep filling the vial as it requires it—as soon as the roots are half an inch long, plant them in light soil. I frequently start roses in the same way. I have planted a few cranberry vines which I intend to keep wet by the waste water from the pump. Think they will do well. [We fear not, unless you keep the pump going.] A Constant Reader. *Maryland, Feb.* 14, 1851.



THE

Horticulturist,

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

The Great Discovery in Vegetation.

IT is one of the misfortunes of an editor to be expected to answer all questions, as if he were an oracle. It is all pleasant enough when his correspondent is lost in the woods, and he can speedily set him right, or when he is groping in some dark passage that only needs the glimmer of his farthing candle of experience, to make the way tolerably clear to him. But correspondents are often unreasonable, and ask for what is little short of a miracle. It is clear that an editor is not only expected to know everything, but that he is not to be allowed the comfort of belonging to any secret societies, or any of those little fraternities where such a charming air of mystery is thrown over the commonest subjects.

We are brought to these reflections by a letter that has just come before us, and which runs as follows:

Dear Sir—I have been expecting in the last two numbers, to hear from you on the subject of the great discovery in vegetation, which was laid before the committee of the State Agricultural Society at its annual meeting in January last. You were, if I mistake not, a member of that committee, and of course, the fullest disclosures of the secret of the gentleman who claims to have found out a new "principle in vegetation," were laid before you. No formal report, has, I think, been published by the Society. The public are, therefore, in the dark still. Is this right, when the discoverer is now urging the legislature of this state to pass a bill giving him a bonus of $150,000 to make his secret public, for the benefit of all cultivators of the soil? Either the thing is pure humbug, or there is something in it worthy of attention. Pray enlighten us on this subject? Yours, &c.

Yes, we were upon that committee, and nothing would give us greater pleasure than to unburden our heart to the public on this subject, and rid our bosom of this "perilous stuff" that has weighed upon us ever since. But alas! this gentleman who has

been urging his great discovery upon the attention of congress and the legislature for ten or twelve years past, put all the committee under a solemn vow of secrecy, though we protested at the time against his expecting that a horticultural editor should preserve silence touching anything that is told him *sub rosa*.

And yet we would not treat our correspondent rudely—for his letter only expresses what a good many others have expressed to us verbally. We shall, therefore, endeavor to console him for the want of the learned dissertation on vegetable physiology which he no doubt expected, by telling him a story.

Once on a time there was a little spaniel who lived only for the good of his race. He had a mild countenance, and looked at the first, enough like other dogs. But for all that he was an oddity. Year in and year out, this little spaniel wandered about with a wise look, like the men that gaze at the stars through the great telescopes. The fact was, he had taken it into his head that he was a philosopher, and had discovered a great secret. This was no less than the secret of *instinct* by which dogs do so many wonderful things, that some men with all their big looks, their learning, yes, and even their wonderful knack of talking, cannot do.

It was curious to see how the little spaniel who had turned philoshpher, gave himself up to this fancy that had got into his head. He had a comfortable kennel, where he might have kept house, barked, looked after trespassers, where he might have been well fed, and had a jolly time of it like other dogs.

But no, he was far too wise for that. He had, as he said, found out something that would alter the whole "platform" on which dogs stood, something that would help them to carry their heads higher than many men he could name, instead of being obliged to play second fiddle to the horse. If the community of dogs in general would but listen to him, he would teach them not only how to be always wise and rich, how to be strong and hearty, but above all, how to preserve their scent—for the scent is a pleasure that dogs prize as much as some old ladies who take snuff. In short, the knowledge of this wonderful discovery would bring about a canine millennium—for he assured them that not only was every one of them entitled to his "day," but that "a good time was coming," even for dogs.

And why, you will say, did not our philosopher divulge for the benefit of the whole family of dogs? "It is so pleasant to do something for the elevation of our race," as the travelled monkey thought when he was teaching his brothers to walk on their hind legs. All the dogs in the country could not but owe him a debt of gratitude, since they would soon become so wise that they might even teach their masters something of instinct. And then they would be so happy—since there would not be a downcast tail in all the land—for the whole country would be in one perpetual wag of delight.

Ah! dear reader, we see that you, who put such questions, know nothing either of philosophy, or the world. As if the people who discover why the world turns round, and the stars shine, throw their knowledge into the street for every dog to trample on. No, indeed! They will have a patent for it, or a great sum of money from the government, or something of that sort. It would be a sorry fellow who should think that every new thing found out is to be given away to every body

for nothing at all, in that manner. To be sure, it would, perhaps, benefit mankind all the more, but that is only half the question. "If you think the moon is made of green cheese," said our curly philosopher to his friends, "you are greatly mistaken. I am well satisfied, for my part, that that is only a vulgar error. If it had been, JOHN BULL would have eaten it up for lunch a long time ago."

So our philosopher went about among his fellow dogs, far and near, and spent most of his little patrimony in waiting on distinguished mastiffs, Newfoundlands, and curs of high degree. He went, also, to all conventions or public assemblies, where wise terriers were in the habit of putting their heads together for the public good. Wherever he went, you would see him holding some poor victim by the button, expounding his great secret, and showing how the progress, yes, and the very existence of dogs, depended upon the knowledge of his *secret*—since it would really explain in a moment everything that had been dark since the days when their great-grandfathers were kept from drowning in the ark. Only let the congress of grey-hounds agree to pay him a million of money, and he would make known principles that would make the distemper cease, and all the other ills that dog-flesh is heir to, fade clean out of memory.

Some of the big dogs to whom he told his secret, (always, remember, in the strictest confidence,) shook their heads, and looked wise; others, to get rid of his endless lectures, gave him a certificate, saying that Solomon was wrong when he said there was nothing new under the sun; and all agreed that there was no denying that there is *something* in it, though they could not exactly say it was a new discovery.

Finally, after a long time spent in lobbying, and after wise talks with all the members that would listen to him, yes, and after exhibiting to every dog that had an hour to give him, his collection of dogs' bones that had died solely because of the lamentable ignorance of his secret in dog-dom, he found a committee that took hold of his doctrine in good earnest—quite determined to do justice to him, and vote him a million if he deserved it, but, nevertheless, quite determined not to be humbugged by any false doggerel, however potent it might have been to terriers less experienced in this current commodity of many modern philosophers.

It was a long story, that the committee were obliged to hear, and there were plenty of hard words thrown in to puzzle terriers who might not have had a scientific education in their youth. But the dogs on the committee were not to be puzzled; they seized hold of the fundamental principle of the philosophic spaniel, tossed it, and worried it, and shook it, till it stood out, at last, quite a simple truth, (how beautiful is deep philosophy,) and it was this—

THE GREAT SECRET *of perfect instinct in dogs, is* TO KEEP THEIR NOSES COOL.

Of course, the majority of the committee were startled and delighted with the novelty and grandeur of the discovery. There were, to be sure, a few who had the foolhardiness to remark, that the thing was *not* new, and had been acted upon, time out of mind, in all good kennels. But the philosopher soon put down such nonsense, by observing that the fact might, perchance, have been known to a few, but who, before him, had ever shown the PRINCIPLE of the thing?

And now, we should like to see that cur who shall dare to say the canine philoso-

pher who has spent his life in studying nature and the books, to such good results, shall not have a million for his discovery ?

ON GRAPES AND WINE.

BY N. LONGWORTH, CINCINNATI, O.

Mr. Downing—There is much experience, and the best of all sense, common sense, in your remarks in your Dec. No., on the cultivation of the foreign grape in the open ground. But you say "Mr. Longworth has tried it on a *small scale*." Had you expended as large a sum as I have done on this wild goose chase, for twenty years, if a *Jerseyman*, you would deem it a *large scale*. There never was a year, for twenty years, that I did not collect foreign grape roots from some of our eastern cities. I also imported over 5,000 grape roots from Madeira, of all their best wine grapes. As many from the middle part of France, and from Germany. All lived, and were cultivated for a few years, and finally discarded. As a last trial, I imported 6,000 roots, composed of 24 varieties of grapes, from the mountains of Jura, in the north part of France, where the vine region suddenly ends. Their vineyards are for months covered with snow. My success was no better than with vines from a warmer latitude. Grafting a foreign grape on wild stock, as you truly observe, does not render the graft more hardy. I have had the grafts to grow with great vigor, but occasionally they were killed, even down to the native stock. We must look to our native grapes and seedlings from them, and to a cross with the best foreign, for our supply. In our latitude, even for the table, few foreign grapes can surpass the *Herbemont*, *Ohio*, *Missouri*, and some others recently introduced.

I hope to send you a sample of sparkling Catawba manufactured by Mr. Fournay, as it has now been in the bottle nearly two years. Those heretofore sold, were bottled by my former manufacturer. Two reasons lead me to believe my sparkling wine will compare favorably with the best French Champaign. It is better flavored, because it is made from the Catawba wine, only. In Champaign, three or four kinds of wine are *mixed* together, as they say, because the one possesses the aroma and flavor, another the effervescence, another the strength. If true, the wine cannot be as well flavored, or as healthy, as it would be from a grape containing all these requisites, which the Catawba does. A second reason is, that no wine made from a mixture of three or four kinds, can be as healthy to the stomach as where made from a single variety. If the Champaign manufacturers were allied, even in the forty-second degree, to Yankees or Jerseymen, I should suspect a stronger reason for the mixture—i. e.: the wine of fine aroma and flavor costs $1 per gallon. The others, from 50 cents down to 25 cents per gallon. My opinion of the *healthy* character of the sparkling wine, made from one variety of grape, is confirmed in a letter I received a few days since, from a physician of Boston, whose name will give credence to the principle wherever it is known.

He says, "From some trials made of your Champaign wine, I am induced to believe it possesses peculiar advantages for the sick, and that it might be important to have some of it at hand. J. C. Warren." Yours truly,

N. Longworth.

[What our correspondent says about the grape culture is full of practical value. His sparkling wine is rapidly gaining favor, and we are confident that the wines of the Ohio—light, pure, and wholesome, will at no distant day be in high repute. Ed.]

AN ELOQUENT PLEA FOR BIRDS.

BY WILD FLOWER, NEW-ENGLAND.

[We heartily sympathise with the following eloquent and beautiful appeal for the little feathered creatures of the air, from our fair unknown correspondent in New-England. If there is any common sight more truly mean and contemptible in our eyes than another, it is that of a biped, with a gun on his shoulder, making game of blue birds and sparrows. And yet our community is, for the most part, callous to the commission of the sin. We recommend such to the perusal of the following, and pray that their consciences may awaken. ED.]

MR. DOWNING—I did not think to have trespassed on your kindness again, or ventured before so wide an audience, even behind my friendly veil. But this time my errand is not to my own sex. I am figuratively on my knees to the gentlemen. Not to any, however, who have a right to smile at my petitioning humility. I come as a memorialist before the law makers of our country, to beseech them for my friends, my companions, my darlings, the little birds. Even as I write, the song of a blue-bird, shivering in this untimely snow, seems in its plaintive cheerfulness to encourage my undertaking. Gentlemen of the legislatures! past, present, and to come, you are very good to the eatable fowls of heaven; woodcock, snipe, partriges, quails, all feel the weight of your protecting influence, but who cares for the singing birds? If they were nightingales, indeed, and their tongues a "lordly dish," as once they were to the Roman epicures, the friendless things might hope for a reprieve; but now they sing their gentle life away, without confidence or hope in its endurance. Day-by-day, boys, who ought rather to be barrelled up with a spelling-book till they come to years of discretion, shoulder their old fowling pieces and stroll the fields with some attendant cur, to try how many dear, harmless, happy little creatures, they can deprive of all they possess, their life; indeed, I grow indignant at the thought. Here the blue-birds sing peacefully, and the song-sparrow warbles with confident sweetness, for no wandering biped comes within these bounds unquestioned by a great dog, happily gifted with a bark much beyond his bite. But in the fields about, I see almost daily one of these little stalking Herods, bent on the murder of these next loveliest thing to children, the innocents of dumb creation. I know very well, they seem to you comparatively useless; they don't do anything but sing. Neither does JENNY LIND! Will you call the fair Swede a useless unit in creation? Is it no good to awaken in so many tired and dusty hearts the breath of hope, and the pulses of nature? And the birds are the poor man's orchestra, the country-girl's concert, the interpreters of earth's great laboring heart and sealed lips. Theirs is an incessant psalm of gratitude, always harmonious with the deep chorus of the inanimate music of creation. They teach us the very lessons of heaven, hope, faith, charity. They are the first to celebrate the slow steps of spring; the last to leave us in the advent of frosty winter; the heralds of rain to the thirsty earth; the prophets of sunshine to the frozen ground. They are the poets of those flowers that live and die unseen of man; and in their tiny love songs tell us, who listen, fairy tales of desolate water-lilies, and gorgeous painted-cups that the summer-moth has deserted.

Beside, they eat up bugs! Am I coming to common-sense now? I avow it as my firm belief, that all the discussions about the curculio which vex the horticultural soul from day to day, would come to a peaceful end if there were birds enough to eat the creatures up. Were our fore-fathers beset with these spoilers of the fruit? Did not my grand-mother's

garden teem with plums, apricots, and peaches, of every kind and color? Was the curculio made expressly for the vexation of later days, or is it that the feathered toll-gatherers are gone too: and to use your own language, oh conscript fathers! "the supply exceeds the demand" of every bug that caters for itself in our thriftless orchards.

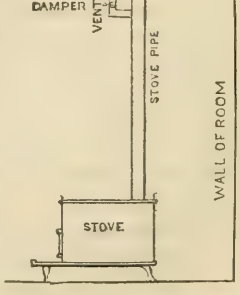
I should not dare to raise my feeble voice in this behalf through any other medium than the Horticulturist; but I know my audience here are the forest trees, as it were, of the land. Sturdy, sensible, culturers of the soil. Educated, intelligent possessors of gardens and green-houses. Electors, if not members, of the legislative bodies. And I am supported by the wide sympathies of every pomological convention and fruit-grower in the land. Strong in this triple shield, I ask you, assembling citizens of this free and fertile country, to have regard in your laws to the birds. Do not let them be slaughtered for the wanton pleasure of school-boys, or the improvement in shooting of the older, but scarce wiser men. Throw around their wind-swung cradle, the sheltering film of legal pains and penalties. Guard their untried wings with fines and prosecutions, to the disturbing and destroying hand. Let them fairly grow up, at the least. Somewhat encourage the song and appetite that give you pleasure, and the insects an end. If it please you to permit their shooting after a certain date, yet let them arrive to some strength and flight. A hand of greater power and tenderness than is apparent to you, has given them means of escape; a pure air and wide sky open before them; and if the leaden message overtake even their rapid pinions, they shall not fall unnoted or uncared for. It is not life, or food, or any other alms, they ask from human compassion; but merely such protection to their existence as is most for human benefit. My dear sirs! care for the birds a little, and they shall care for you! Your fruit shall ripen in August suns. Your plantations shall echo to songs that will be vocal gratitude to your conscience. And all lovers of the woods and fields will bless you in their heart for the little comrades of their pleasure. Last and least, you will have, though it be of faint and scorned value, the sweetest perfume of thanks that lies folded away in the heart of a

WILD FLOWER.

In the Bushes, March 10, 1851.

A CHEAP VENTILATOR.

DEAR SIR--In your Dec. No. you mention that Dr. ARNOTT'S chimney valve is the best cheap ventilating apparatus. I wish to describe a cheaper and more simple one, invented by my friend PETER TAYLOR, Esq., of this place, and which has succeeded admirably wherever it has been tried. It can be attached to any stove pipe for less than a dollar, and will ventilate rooms heated by a stove, the pipe from which goes into a chimney in an adjoining room, and to which Arnott's invention could not be applied.



It is simply an elbow of sheet iron, of, say three inches in diameter, attached to the upper part of the stove pipe, with the mouth uppermost near the ceiling; the short leg of the elbow and the long leg of the stove pipe and chimney, forming an air syphon through which the heated air from the upper part of the room rushes with great rapidity and of course cold air replaces it from without the room. It can be regulated by having a damper on it, so as to cool the room in a very short time, from excessive heat, to any temperature you may choose. There is no danger of smoke escaping by the ventilator; in fact the air rushes in with such velocity as to drive a toy wind-mill placed in the mouth of it.

JAMES DOUGALL.

Rosebank, near Amherstburgh, Canada West, Jan. 7, 1851.

WAYNE COUNTY—THE ORCHARD OF NEW-YORK.

BY R. G. PARDEE, PALMYRA, N. Y.

NOTHING has attracted more attention lately in the markets of New-York, than the superb fruits of Wayne county. The pears especially—the fairest and most delicious Doyennes or Virgalieus to be found in that market—come not from the Hudson, from New-Jersey or Pennsylvania—but, barrels upon barrels, from *Wayne county*. The soil of that county, abounding in lime and potash, seems so especially adapted to the growth of all the fine fruits, that the orchards and fruit gardens of that central portion of New-York will, with very little care, produce not only the greatest abundance for the owners, but enable them to export more fruit than any county in the state. We are much obliged to Mr. PARDEE for an opportunity to put on record the natural orchard fertility of this portion of New-York. Our pages have lately had so many more accounts of the *pests* of the orchard, in the shape of insects, that a stranger to the actual products of our orchards might almost think the blight and the curculio left us neither pear nor plum, from one end of the land to the other, while the fact is just the contrary. ED.

MR. DOWNING—It is quite pleasant to comply with your request, to furnish the readers of the Horticulturist with some of the interesting facts connected with the cultivation of fruit in Wayne county.

The county comprises a strip of land, say 17 to 20 miles wide, by 38 to 40 long, bordering on Lake Ontario, between Oswego and Rochester. Sixty-five years ago it was a heavy timbered forest, uninhabited by the white man. At the present time that forest is almost subdued, so that there are very few acres of waste land to be seen in all its length and breadth, particularly in the western or older part, where, indeed, I may say there is hardly an untillable hill, or an unrecoverable spot of low ground, or a stony acre visible, so that Prof. NORTON justly recorded of it—"This is a superb country, with wonderful natural advantages."

The face of the land, except from the Lake up to the Ridge Road, some four or five miles, is gently rolling, mostly from east to west. The soil is a mixture of sandy and gravelly loam, with sections moderately mixed with clay; is easily tilled, and the crops are very certain.

The soil and climate of Wayne county prove to be particularly favorable to the growth and perfection of all our various kinds of fine fruit. The grape, the raspberry, the blackberry and the strawberry, with civil attention, amply reward our care.

The pear has, to a very great extent, escaped or recovered from the effects of the pear blight, and the old standard pear trees around us have, during the last season, borne so well, that one firm in this village alone, shipped eastward last fall, between one hundred and fifty and two hundred barrels of the delicious "Virgalieu," as the White Doyenne is familiarly called in market. A few years hence our county will greatly increase its exports of this article from our young pear orchards, for the Messrs. YEOMANS of Walworth, have already set out of this variety alone, over *four thousand trees* on the quince, and E. BLACKMAN, Esq., of Newark, has also fifteen hundred trees for market production, besides numerous smaller orchards, I might name, including not only this favorite variety, but from ten to fifty or seventy other of the choicest varieties.

It has not yet come to my knowledge that the Virgalieu has, in our county, shown symptoms of cracking or degeneracy, although such may possibly be the ease.

The peach is a great favorite in our county, and well it may be, for it grows almost spon-

taneously; is reliable for the market, and its quality cannot be surpassed, as our premiums witness when in competition occasionally at the state Fair. In favorable seasons our county exports not far fron *ten thousand bushels of dried peaches*, but these are mostly from our common peach orchards, Rare Ripes, &c. Some of our private fruit growers number from sixty to seventy selected varieties of the peach, already in fruit, while a great portion of our citizens have from ten to twenty of the choicest varieties around their dwellings. We cannot, of course, compete with our New-Jersey and Delaware friends in the extent of our peach orchards, and yet many are growing this fruit in various parts of our county quite extensively, for market. One of our farmers, Mr. ODELL, in the extreme north-east portion of the county, has already a rare peach orchard of fifteen hundred of the best varieties of trees, in bearing I am told, and for which he designs to seek a market by the help of a small schooner, via Oswego. Our poorest families can, many of them even now, indulge plentifully in the finest George IVth and Crawford Peaches, and the number is rapidly increasing.

Of cherries, it need only to be said that we raise them in abundant quantities, of unsurpassed flavor and size, and of the finest varieties.

We have a very large quantity of plums, including most of the new and best kinds, grown in our county; and the exports of dried plums from our county, in favorable seasons, will not vary much from *three thousand bushels*. But within a year or two, the black wart has most virulently and fatally attacked our plum trees, and threatens entire destruction to this fruit. The Peach Plum, and some other kinds, seem as yet to escape. but the genuine Green Gage, and most other kinds, are going rapidly. We do not so much regret this, as it has been a favorite argument with some dealers for years past, that compared with the peach it was hardly worth growing; being of the same season, of more difficult cultivation, and inferior fruit in all respects. This, however, has not prevented our enterprising amateurs from obtaining most of the desirable varieties.

We now come to our most important fruit, the apple, which, perhaps, no where grows more freely with little care, than with us, and yet our finest fruit growers always give the best cultivation. We have examples around us of high cultivation, that would do honor to the Hudson river districts; for instance, a retired merchant in a neighboring town, first purchased a side-hill of ten or fifteen acres, for a fruit orchard, and liberally supplied it with about five hundred loads of manure, the same quantity of leached ashes, and about an equal amount of swamp muck and coal-pit bottoms—after which he trenched it, and thorough drained the whole with pipe, until now I much doubt whether our county or any other, can any where produce an orchard of trees of five years old, of such extraordinary size and productiveness, as that of Mr. YEOMANS, of Walworth. I understood Prof. NORTON to say as much of this fine orchard, when we together visited this place last fall.

But to return, I can add while the apple always gratefully repays superior care, yet it is also true, that our orchards, left almost to nature with us, produce a fair quantity of excellent fruit.

Our orchards often largely overrun the estimate of production, a striking instance of which occurred last fall, where an intelligent farmer and his neighbors estimated the product of his orchard at one hundred barrels, and so sold it to the speculator, who succeeded in obtaining, however, more than five hundred barrels from it. Numerous other instances of orchards yielding two and three times as much as estimated, came under my own observation. Our single port of Palmyra, during the last season, cleared more than *fifty-eight thousand barrels of grafted fruit* east, and ten to *twelve thousand bushels of dried fruit*, while east of us, in our county, remains the large and flourishing villages of

Lyons, Newark and Clyde, to ship their quota. Mr. Wm. H. Rogers, of Williamson, one of our lake towns, who obtained the first premium of a silver medal and diploma, at the late annual meeting of the New-York State Agricultural Society, at Albany, for the *best* and *largest* (134 varieties) collection of winter apples—is a young and enterprising farmer, occupying about one hundred acres of land, on forty-five of which he has growing in the finest condition, over seventeen hundred trees, comprising sixty to seventy varieties of the choicest apples. Other farmers have immense orchards, which yield up their products to them with no sparing hand. A few seasons since, one of my neighbors had two thousand grafts set in one spring, on a farm he had recently bought. Among the earliest pioneers of Wayne county, were the Foster and Reeve families of this town, who penetrated this then unbroken wilderness, selected their location, marked their "pre-emption tree," and at the foot of the tree cleared away a few feet of ground, and sowed first some apple seeds for a nursery, and returned east to Long-Island, after securing their title to their soil.

The following season they returned with their families, and brought and introduced into their small nursery, grafts of the Esopus Spitzenburgh, Rhode Island Greening, and Roxbury Russet Apples, and from this small beginning these varieties spread in every direction, so that now these three standard varieties seem to predominate in our market.

I was quite surprised two years ago, on examining the last report of the canal commissioners, to find in the returns for that year, that the collectors' offices of Palmyra and Lyons, in our retired county, had shipped during the year, more dried fruit, by more than thirty per cent, than the entire state west of us, including Rochester and Buffalo, and of course, including the Ohio fruit via Buffalo; and also fifteen per cent. more than the entire state east of us to Albany. All the offices east cleared six hundred and ten thousand pounds; those west cleared five hundred and thirty-eight thousand pounds, while Lyons and Palmyra cleared seven hundred and eight thousand pounds.

And yet it seems quite certain, that fruit raising in our county was never so popular as at the present time, or were there ever so many practically engaged urging it forward. It is made apparent to every one here, that to enjoy in profusion the finest fruits the world produces, costs really very little besides the pleasure of its cultivation; but the enthusiasm excited on the subject, causes fruit to be cultivated in many quarters, with most extraordinary care, and liberality of expenditure. Among men of various pursuits, I might instance Messrs. Lovett & Rogers, merchants of this village, Mr. M. Mackie, a farmer of Galen, and Mr. H. G. Dickenson of Lyons, an enterprising and intelligent mechanic, who has already over fifteen hundred fruit trees growing on his beautiful grounds.

Our sister village of Lyons started very early in the pursuit of raising rare fruits, and now can exhibit fruit gardens and orchards of great size and excellence.

Wayne county is under lasting obligations to our truly esteemed friends, John J. Thomas and Wm. R. Smith of Macedon, for their liberal exhibition of the choicest and most approved varieties of fruits, and also for supplying us with reliable kinds at cheap rates. I believe I can say in the name of Wayne county, they have *never deceived us*, which is a rare testimony for nurserymen, who with all their care are often liable to be deceived themselves.

Our Rochester friends, and Albany friends, and Flushing friends, and particularly our Newburgh friends, justly claim our acknowledgments, also, on behalf of their respective nurseries.

And yet the desire to *increase* our fine fruits, was never greater than at present. Last spring a farmer, north, sold and delivered in the northern range of two or three of our

lake towns, four thousand fruit trees during the transplanting season; and yet we have no fear that as fine fruits as we can easily raise in Wayne county, will ever need to beg for a market. We will cordially rejoice with those who can or will excel us, and engage never to be jealous over a rival.

R. G. PARDEE.

Palmyra, Feb., 1851.

ON THE IMPROVEMENT OF FRUIT BY CROSS-BREEDING.

BY JOHN TOWNLEY, PORT HOPE, WISCONSIN.

IN the July number of the Cultivator, is the substance of a paper by the President of the Massachusetts Horticultural Society, on raising new pears. He urges the importance of raising seeds for new varieties by crossing, regularly and systematically conducted, and proposes that two good varieties of summer, autumn and winter pears, should be grown in three different locations, a quarter of a mile a part, and out of the influence of other pear trees. The Seckel and Louise Bonne de Jersey, for instance, are to be grown by themselves, and the seeds, when taken from the ripe fruit, are to be labelled, Louise Bonne fertilised by the Seckel, and the Seckel fertilised by Louise Bonne.

It is a matter of some importance to raise new varieties of fruit, which, by the same expenditure of land and labor, will yield more certain and more abundant crops, and of greater excellence than many varieties we now possess. It is desirable, therefore, that all who may wish to devote a portion of their time to this good work, should know by what means they can most certainly attain the object they have in view. I entirely coincide in the opinion that cross-breeding is that means; but I cannot so readily subscribe to the author's method of conducting the experiment—and I venture to hope that I shall be able to prove that my objections are well founded.

It is usual with the best cultivators *especially* to *fertilise* a few flowers, not to trust to crosses which may incidentally take place between varieties growing contiguous to each other, which appears to be the plan recommended. A man may botanise a summer through without meeting with a single plant which he has reason to believe to be the offspring of two parents; yet there is little doubt that many of our wild flowers can be made to intermarry with each other. In gardens, a closer relationship exists between many plants, than between the wild flowers of the fields. We have in the garden, many varieties of one species; in the woods each plant is a distinct species—and experience has proved that it is much easier to breed between varieties than between species; hence, in gardens, natural crosses not unfrequently occur. But it will be found a true saying in this, as of more important matters, that "it is well not to trust to others what we can do ourselves"—and of all helps, the wind and insects will be found most capricious, and little to be relied on. Pollen is known to be conveyed by the wind, for miles, and bees in their wanderings, do not limit their flights to the extent of a quarter of a mile; there is, therefore, almost as great a probability that the seeds of the two trees growing side by side, would be fertilised by the pollen of others growing at a distance, as that one tree should fertilise the flowers of the other. Each blossom of the pear, moreover, is provided with its own stamens, affording pollen at the exact time when the embryo seeds are in a condition to be fertilised. I am quite at a loss to understand by what freak the pollen of the flowers of each tree is to fertilise the seeds of its neighbor, rather than its own. That some may be cross fertilised, is probable, but they will be exceptions—and in our endeavors to improve the pear, whose seedlings require so long a period to arrive at maturity, in a matter so important as cross-

breeding—certainty should be substituted for chance when it can so easily be done. The late Mr. KNIGHT and the Rev. Mr. HERBERT, who have probably made more experiments in cross-breeding and hybridising plants, than any other men—applied the pollen artificially, and invariably removed the stamens from the flowers to produce seed, before their pollen had arrived at maturity, because they knew that the pistil was so likely to be affected by its own stamens, that there could be no certainty as to the result of their experiments, unless they were destroyed while yet in an imperfect state. How much less, then, must be the chances of obtaining cross-fertilised seeds, when not only the stamens are not removed, but pollen from another plant is not directly applied. By operating on a few flowers, after the manner of KNIGHT and HERBERT, we may be sure that our seeds are cross-fertilised; by trusting to the wind and insects, there can obviously be very little certainty about the matter. The author of the paper referred to being a nurseryman, I apprehend knows perfectly well what is the usual mode of proceeding in this matter, but may have considered that it was of little use recommending the practice generally, many not knowing much about the sexual organs of plants, and the mode of distinguishing them and conducting the experiment being somewhat difficult of explanation on paper, though in the field the easiest thing imaginable. I think, however, that it may be done; and as some readers of this Journal who have not hitherto bestowed much attention on the subject, may possibly be induced to take an active interest in it, a few further remarks on the object of cross-breeding, the mode of conducting the operation, and of cultivating the seed-bearing plants, may not be devoid of use.

In all that regards reproduction, a close analogy seems to subsist between plants and animals; and he who is a successful breeder of one, may, by applying the same principles, become an equally successful improver of the other, providing he brings to his task an equally competent knowledge of what constitutes excellence.

Both plants and animals will only breed within certain limits. As a general rule, two animals of distinct genera cannot be made to breed with each other—and it is doubted by those most likely to know, whether a truly bi-generic mule plant has yet been seen. Animals of two distinct species belonging to one genus, as the horse and the ass, are well known to breed together, and that the offspring are incapable of reproduction. So of plants; the Morello, for instance, has been made by Mr. KNIGHT to breed with the common cherry, two distinct species, and the progeny were true mules, affording abundance of blossoms, but no fruit.

Again, a species of animal or plant is capable of being progressively improved by the skill of man, or, in other words, they can be made to assume, by improved culture and judicious selection, through successive generations, various modified forms and qualities which better enable them to minister to man's wants, than the species from which they were originally derived. Now, plants or animals, which culture or domestication have much altered from the normal condition of the species, are not alike in all particulars. Owing to some peculiarity of constitution, some are better adapted to one soil or climate than to another, and those suited to a given location are found to possess various degrees of excellence. These, then, constitute the materials with which the cross-breeder or improver has to work; and it is highly desirable if not requisite, that he be well acquainted with his materials; he should know what has already been done, and be a good judge of plants or animals, as the case may be, in order that he may be better able to determine what remains to be accomplished, and what varieties of flowers or fruits, or breeds of animals, are best calculated to further his views.

It is advisable at the out-set, to consider well what constitutes perfection. The impro-

ver should study his subject point by point, put his thoughts on paper, and to this ideal standard of perfection, he should constantly aim. This will save him from aiming at one thing at one time, and another thing another time—and there is little doubt that his stock would shortly assume a decided character.

Most important points to be attended to in selecting plants or animals, to breed from, are, that they shall be hardy, adapted to the climate, and free from disease. The certainty of produce, and consequently the profit to be derived from fruit trees in a given number of years, depends much on their hardiness, and on the power of their blossoms to withstand spring frosts; and there are many facts on record which seem to indicate that disease is hereditary in the vegetable, as it is in the animal kingdom.

The principal objects of cross-breeding are, to add vigor to the constitution; to modify, or get rid of defects, and to combine many good properties in one individual, in the shortest time. It is a common practice with the breeders of cattle, to obtain bulls now and then from other herds, rather than to breed from generation to generation, from their own stock—the object being, in some cases at least, to prevent the stock from becoming delicate—a cross from another herd being found to invigorate the constitution. And Mr. KNIGHT, in his numerous experiments to obtain improved varieties of vegetables and fruit, "found that he obtained an increased vigor and luxuriance of growth when the fecundation of the blossoms of a variety was produced by the pollen of another kind."

Again, cross-breeding is resorted to with a view to obliterate defects, and to combine many excellencies in one individual, in the shortest time. Supposing, for instance, a man had a herd of Short-horns—good in all points, excepting that they were somewhat too light in the hind quarters; he might, in the course of several generations, by culling his animals to breed from which showed this defect the least, so improve his stock as to bring it near to perfection; but, supposing instead of this, when made conscious of the defects of his herd, he at once obtained a Short-horn bull, good in all points, except that it was too full in the hind quarters, defective in the opposite degree; the result would probably be that the progeny would be more symmetrical than either of its parents, perhaps more so than if the bull had been perfect. Thus by one judicious cross, a breeder might cause his animals to attain a high degree of perfection in one generation, which, if he had confined himself to his own stock, would have taken him several generations to accomplish.

Until recent times—for it is but lately that the nature of the sexes of plants was clearly understood, (Mr. KNIGHT being the first I believe to turn this knowledge to practical account,) men had to take advantage of any deviation which appeared in their crops naturally, or as the result of improved culture; and if the cultivator wished to perpetuate an improved variety, or obtain others better, he grew and seeded the plants alone; and if any seedling raised from it was better than the parent, that only was sown; seed from it sown; the best again selected, and so on through successive generations. A practice similar, it will be observed, to the breeding in-and-in of animals. Now, the practiced experimenter having a distinct object in view, a certain standard of excellence to aim at, carefully examines his plants, not with a view to select one but several; he notes their power to withstand adverse weather; their habit of growth; the character of their foliage; the abundance, form, substance, color, size and fragrance of their flowers; or the quantity, quality, size and beauty of their fruit, and the period it arrives at maturity. If he finds a plant having one good point in perfection, and not remarkably defective otherwise, it is suited to his purpose; he may cross this with another plant having a second good point, and tolerably good in other respects, and may thus combine the two good properties in one individual. But if he could only meet with plants possessing these two good points, which

had also marked defects, providing the defects of one were opposed to the defects of the other, so that if he could blend the two together a more perfect plant would be obtained than either, these two might be suited to his purpose; he might cross them in the hope that the defects of one parent would counteract the defects of the other, and enable him to unite their two good properties in one individual, without the plant being otherwise objectionable. If, in the same season, two other plants, possessing two other good points, were crossed, and with a like result, the best of the seedlings obtained from each of these crosses, might be crossed, and it is probable that in the next generation a seedling would be raised in which the four good points would be combined. At the present day, however, the experimenter, instead of having to commence operations with an original species, has to deal chiefly with varieties already considerably improved. The Seckel and Louise Bonne de Jersey Pears, for instance, which it is proposed to cross, possess to begin with, many desirable qualities. They are both hardy, adapted to the climate, good bearers, and yield fruit of first rate excellence. But the fruit of Louise Bonne de Jersey is larger and handsomer than that of the Seckel; while the fruit of the Seckel is superior in quality to that of the Louise Bonne. If, therefore, seeds of Louise Bonne were fertilised by the Seckel, and the fruit, bearing these seeds, made by superior management to attain a greater size and higher flavor, than by ordinary culture they ever attain to, it is likely a variety would be raised whose fruit would rival the Seckel in quality, and Louise Bonne in size and beauty. I need not pursue this further; it must be sufficiently apparent that cross-breeding when properly conducted, is a short cut to perfection—it enables one to effect in a few generations, what the former practice would have taken many generations to accomplish; hence, the truly marvellous improvement which has been made within the last twenty years, in plants whose seedlings require a comparatively short period to arrive at maturity, as the rose, pelargonium, fuschia, calceolaria, strawberry, &c.

Next, as to the mode of cross-breeding plants. The apple, pear, peach, plum, cherry, raspberry and strawberry, all belong to the natural order *Rosacea*, and their flowers have an indefinite number of stamens, about twenty or more. But as one not previously acquainted with these organs, may be somewhat puzzled to distinguish them from the pistils, if the study is commenced with the flowers of these plants, it will be well to examine first some flowers which have a certain and fewer number of stamens. Take the currant, for example, one of the earliest plants in blossom, and found in almost every garden. With a pen-knife slit carefully down one side of a full bloom flower, so as to spread it open for examination. There will be found an outer covering, or envelope, divided at the edge into five small parts; this is the calyx of the flower; next are five small leaflets—the petals, situated alternately with the segments of the calyx; then we have five small bodies alternate with the petals, and seated like them, on the throat of the calyx; these are the stamens, or male organs, which produce the yellow fertilising dust, called pollen. In the center of the flower is the pistil, or female organ, a small, greenish, thread-like point, more or less two-cleft at the summit, and which is seated directly on the miniature berry containing the embryo seeds, and not on the calyx, as the stamens. Having well examined these flowers, there will be no difficulty in distinguishing similar parts in the flowers of other plants. In the pear, there is the green calyx outside, divided at the edge into five small segments; then there are five large distinct petals, next numerous stamens, each tipped with a little head or anther, producing the yellow pollen grains; and lastly two to five pistils in the center. Now, all that requires to be done to cross between two varieties, is this; the flowers to produce seed must be carefully opened just before they naturally expand—before any pollen is visible, and the stamens must be removed with a pair of

small pointed scissors, taking great care to leave the pilstil in the center of the flower uninjured; then, when these flowers have expanded, perfect flowers of the variety intended for the male parent, must be collected, and the pollen from them gently dusted on the summit of the pistil. The best time to apply [with a small camel's-hair brush] the pollen, is in the middle of a dry sunny day, and for fear of failure it should be repeated three or four days in succession. The petals of the flowers have been observed to fall soon after the seeds were fertilised, and to retain their freshness for days longer, when this had not taken place.

Owing to the difference in the size of flowers, and the position of the stamens, the pear will be found much easier for the learner to operate on, than the currant.

There are one or two other points, which, if attended to, may contribute to the success of the experimenter. Not only should much care be bestowed in selecting varieties to raise seeds from, but they should be so managed as to ensure a healthy and vigorous growth, and the finest fruit and most perfect seeds which the variety cultivated is capable of producing. These objects may be attained by superior general culture, and by special expedients. Perhaps I may best explain how, by stating the plan I intend to follow in endeavoring to improve our native Black Currant of this region, *Ribes floridum;* it appears to me a much finer species to begin with than the *R. nigrum* of Europe, the origin of the garden varieties: it has a neat habit of growth, bears abundant crops of tolerably well flavored fruit, and its blossoms are somewhat showy. My aim is to obtain a variety with flowers approaching the color of those of the Missouri Currant, *R. aureum*, and with fruit equal or superior in size and quality to that of the Black Naples. In raising plants or animals to be grown for profit, utility should never be sacrificed to mere show, but if we can combine the beautiful with the useful, it is well.

From several plants raised in the last year, I shall select three which have the cleanest and strongest branches, and whose roots are well developed from the base of the cuttings. This I have found a matter of some importance; why it is so, I shall endeavor to explain in another letter on the Season for Transplanting. The next consideration is, where and how the trees should be planted so that the organs of vegetation may perform their functions in the most efficient manner. A soil moderately rich, and free from stagnant water, should be selected, and a hole dug for each plant about six inches deep, and wide enough to admit the roots being laid out their full length; the small lateral fibres, as well as the main roots, should be spread, as the greater the space covered, the greater will be the means of the plant for obtaining food from the soil. It may be well to cover the roots slightly with earth, as contact with manure sometimes produces canker. The hole may then be filled up with a compost formed of decayed turf, well rotted stable manure, and charcoal, this being calculated to produce a steady and vigorous, but not over luxuriant growth. Abundance of food will avail but little if the plant has not the means of digesting it. By the action of light on leaves, the crude sap undergoes certain chemical changes which fit it for the nourishment of new parts; the trees should not, therefore, be shaded by others, but fully exposed to light. Circumstances which may tend to render the leaves less efficient, should also be avoided or prevented—such as a situation exposed to boisterous winds, and the attack of insects. If a favorable time should be chosen for transplanting, the trees may attempt to bear fruit the first season; all the blossoms should, however, be removed, so that the energies of the plant may be directed solely to the extension of its feeding organs. The same sap, variously modified and combined, gives existence alike to the organs of vegetation and reproduction. By destroying the fruit of a young tree, a greater amount of sap is expended in the production of roots and branches; a greater

amount of organised sap will also be deposited in the tissue of the wood, than if the tree had borne fruit; this will give rise in the following spring, to vigorous branches and well developed leaves; it will also contribute directly to the growth of the fruit. Early in spring, the plants should be top-dressed with a compost as above. Numerous blossoms will now be produced, all of which should be destroyed, excepting about four or six bunches. By reducing the quantity of fruit, we increase the size and improve the quality of that left; a fact well understood and turned to account by some cultivators, but not, I fear, sufficently understood or practiced generally. When the fruit is set, if the weather should prove dry, liquid manure may be applied with advantage; one part of pigeons' or fowls' dung, with three or four parts of water, is a powerful and prompt fertiliser; after being mixed it should be allowed to settle, and the clear liquid used. This watering should be continued more or less, according to the nature of the season, till the fruit shows signs of ripening—water should then be withheld, or the quality of the fruit may be injured. Fruit of the best quality being always obtained when the latter part of the summer is dry and sunny. The growing points of the young shoots may now be nipped off, with a view to add still farther to the size and quality of the fruit. When the berries are ripe, the seeds should be washed free from pulp in milk-warm water—dried on paper, and suspended in cotton bags, in a dry room, till the time of sowing.

As soon as all danger from frost is past, the seeds may be sown thinly in rows, in a good light soil; when two years old, the trees may be transplanted to where they are to bear fruit, and they should be planted at such a distance apart, as that the foliage of one will not interfere with or shade that of another. If the branches are too crowded, some of the weakest may be cut clean out. The aim should be to have as great a breadth of foliage as possible to the light, with a view to hasten the period of fruit bearing.

By this mode of cross-breeding, different varieties of the pear or other fruits may be grown together, instead of a quarter of a mile apart. If trees are set out purposely for cross-breeding, no blossoms should be allowed to perfect their pollen; all should be early destroyed, excepting those to be operated upon. It is not, however, absolutely necessary, though advisable, to plant trees specially for this purpose. A healthy young tree, already in full bearing, may be used; it should be suffered to bear only a very moderate crop of fruit the year preceding the experiment. A branch may then be selected on the south side, all the flowers on the branch to be destroyed, excepting those to be cross-fertilised; these I would enclose in net or gause bags, to protect them from insects, and possibly from the ingress of adventitious pollen. When the fruit is set, it should be again well thinned all over the tree, and such other means resorted to as seem best calculated to add to the size and quality of the fruit.

There is a tendency in the seedlings of all highly improved fruits to revert to the original condition of the species, which can only be prevented by judicious selection and crossing, combined with high culture; comparatively few varieties deserving permanent culture will be obtained, even with the best management—but the chances will evidently be much in his favor, who diligently avails himself of those means which the practice of the most enlightened cultivators, founded on a knowledge of the functions of the various parts of plants, has proved to be successful.

I noticed that two correspondents were boasting of the number of good varieties of peaches and pears which had been raised in the states, compared with the quantity of seedlings grown. I suspect that much of the credit of this is due to the climate, and that in our endeavors to improve many kinds of fruit, we shall have an advantage over most European nations, especially over England and Germany, where cross-breeding fruits has hitherto

been most practiced. A given species of plant requires a certain range of temperature, and a certain amount of light, to enable it to grow in a healthy condition, or yield fruit of the greatest excellence; an excess or deficiency of heat and light, being alike injurious.

The gooseberry, strawberry, apple, and perhaps the cherry, are perfectly at home in England; they are grown there in great perfection, and there many valuable varieties have originated. But the pear, generally, seems to require a somewhat higher temperature. Several of the fine Flemish varieties do not ripen well on standards in ordinary seasons, and fruit from a wall, though large and handsome, is never so highly flavored as that ripened on a standard. Peaches, again, grown in England at great expense, chiefly under glass, and with artificial heat, are poor and insipid, compared with the delicious fruit which may be had so cheaply in New-York. If, therefore, it is a matter of so much importance that the fruit we wish to save seed from, should be made to acquire a high degree of excellence, it is apparent that in several of the states at least, ordinary culture will afford peaches far superior to any that could be raised in England by the most skillful gardener. Our high summer temperature, and dry atmosphere, may be imitated, but the brilliant sunshine, the bright light, on which the quality of the fruit so much depends, is inimitable. This should be a matter of great encouragement to the improvers of the more valuable kinds of fruit in this country—favored so much by climate, judicious selection and crossing, with improved culture, they can hardly fail to be otherwise than successful.

While on this subject, perhaps I may be permitted to quote from one of the letters I had the pleasure to receive from the late ANDREW KNIGHT, a few remarks respecting the kinds of fruit he considered yet capable of improvement.

After giving me a humorous account of an interview with a grower of large gooseberries in Cheshire, he says, "I lament that the improvers of the gooseberry did not in preference, select the Red Currant. Culture has always a tendency to render fruits less acid, and to some extent, more tasteless, and the currant, on that account, promised a wider extent of improvement than the gooseberry. I think it not very improbable that the Red Currant might be made by successive generations, and proper culture, a sweet, perhaps a very sweet fruit. The Green Gage Plum is the cultivated sloe. And I do not doubt that the pungently acid fruit of the Berberry might be changed into a very saccharine fruit. The apple and gooseberry alone, of our fruits, have, I think, been shown in the greatest state of perfection, nearly what they have the power of acquiring in the climate of England; and of the plum and common cherry, we have many, or more properly, several fine varieties. To the improvement of the Morello Cherry, a totally distinct species, no attention has been paid. With the pear, probably much may yet be done, but I fear the pear assumes its highest state of perfection in the warmer parts alone of England; as a fruit for the press, in such situations, I think it capable of affording a very fine wine fluid, far preferable to the wretched mixture often drank in England under the name of wine."

I have been glad to learn from the pages of this Journal, that many are now endeavoring to raise improved varieties of fruit. Gardening is allowed to be one of the most delightful amusements which can occupy the leisure hours of man—but pleasing as the ordinary culture of the plant may be, it is a tame and monotonous pursuit, compared with the pleasure to be derived from raising new kinds of perennial flowers or fruit from seed. The comparative uncertainty of the results of our experiments has its charms. In ordinary gardening, we know that the flowers and fruit of next summer will be like those of the summer that is past—differing it may be, a little, in beauty or flavor, as the season is propitious or otherwise; but from the moment a seedling springs from the ground, to the time

it produces its flowers or fruit, it is an object of great interest, and a source of much speculation to the experimenter; more mind is in the work, than in ordinary gardening—greater skill is required—more correct habits of observation, and a more intimate and extensive knowledge of cause and effect. And not only may the pursuit be recommended as a refined amusement, or for the pleasure it is capable of affording, but it may be recommended as a commercial speculation. There is, doubtless, ample room for improvement yet—more valuable varieties of fruit than any we now possess, will yet be obtained, and to say nothing of the pleasures of hope to be enjoyed by the way, there is a fair prospect of ultimately receiving an adequate return for the time and labor expended. Within twelve years from the time of proving the fruit, an improved variety might be introduced into every garden of the United States, and in a country where fruit growing is a matter of so much importance, it must be a source of gratification to the successful experimentalist, to be conscious, that even by his amusements he may have contributed to some extent, to the welfare of his country and fellow men. JOHN TOWNLEY.

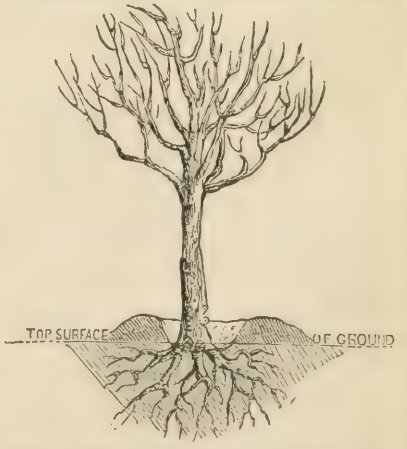
Port Hope, Columbia Co., Wis., Jan., 1851.

Many thanks to our new correspondent in Wisconsin. We recognise him as a well known cultivator, who has seen the best practice on the other side of the Atlantic, and shall be glad to hear from him again. ED.

NEW MODE OF BATTLING THE PEACH-WORM.

BY J. C. WRIGHT, SCOTTSVILLE, VA.

A. J. DOWNING, Esq.—I noticed some time ago, in your book on Fruits and Fruit Trees of America, an article on the subject of planting fruit trees, in which you advise that the trees should be so set in the ground as to bring the upper roots on a line with the surface of the earth. I liked the suggestion much, and in setting out a number of young plums and peach trees, I adopted it. I have, however, suffered greatly from the destructive little grub which attacks the collar or root of peach and plum trees, and had tried various means which had occurred to me as remedies, such as unslacked or powdered lime, ashes, tobacco, hot lye, and pot-ash—all I found to be inefficient. Last may I gave my trees a thorough over hauling, or examination, and found an incalculable number of these grubs at their work of destruction and death about the collar and roots. I then tried another experiment, which I found to answer the purpose admirably, so far. It is as follows:



I commenced by removing the earth from around the roots, as is exhibited by the annexed figure, so as to form a circle round the tree, and make a basin of a foot in width, and four inches deep. I then procured a quantity of rock lime, and slacked it, reducing it to the consistency of very thick white-wash, and after letting it stand in this state for a day, I poured it into this basin, completely filling up the

interstices about the roots. In a short time this lime was formed into a hard crust, which served not only as an effectual *bar* to the entrance of the grub during the whole season, but what is almost equally important, I found last fall upon removing this lime from its bed, that the wounds, (and some of them were quite serious ones,) which I had inflicted on the base of the tree in removing the grubs, were healed up, and in as good and healthy condition as any part of the tree; and now my trees are in a more healthful and promising condition than they ever have been. This process of liming, however, should be renewed every spring.

I do not know whether this experiment of mine is original, but can confidently say that I never saw or heard of its having been tried before. But be this as it may, the information is before you, and if you think it will in any degree promote the interest of horticulture, it is at your service. Very respectfully your ob't serv't. J. C. Wright.

Scottsville, Albemarle Co., Va., 16th Dec., 1850.

A very good hint, and one which may be amplified and improved on. Ed.

DOMESTIC ANIMALS FOR PARKS AND PLEASURE GROUNDS.

BY L. F. ALLEN, BLACK ROCK, N. Y.

[The following article, on the same subject as the leader in our March number,—was written before our correspondent had seen that number—though it is an excellent continuation of the same idea. We are glad to have our notions of the advantages of introducing domestic animals into the ornamental park scenery of our country places, fortified by one of the most noted stock-breeders in the country, whose broad meadows on the Niagara river, give example for his and our precepts. Ed.]

Dear Sir—It is passing strange that a people so intelligent in most things appertaining to their own enjoyment, and so ambitious in the fitting up and arrangement of their country places, as the Americans, have thus far shown so little taste in collecting fine domestic animals about them, not only as creatures of convenience and economy in living, but as adding a beauty and effect to their summer homes, far more expressive than anything else which can be obtained, even at a much greater expense. In every populous part of the United States, and more particularly in the neighborhood of our large cities and towns, scattered far and wide, are seen imposing and costly houses, seated in large lawns and parks, planted out with noble trees, embellished with beautiful gardens, and expensive grounds, to say nothing of the various minor decorations, both of nature and of art, set up or planted at much cost, and cared for at a heavy annual charge upon the proprietor, merely as objects to gratify the taste, or to arrest the attention of the passer-by, to gaze at and admire. These, so far as they go, are all very well; but, contrary to what is usually supposed, they fall far short of *completing* a country establishment as it should be; a pantomime in the landscape; not *speaking* to the heart like the living action and the moving beauty of animal life, which would otherwise give effect and fulness to so much rural beauty and ornate embellishment, and make it just what it should be, the perfection of rural objects inartificially brought together, and filling up a complete picture.

In taking a summer drive through a neighborhood of the fine summer establishments out of our large cities, or on the banks of the Hudson or the Delaware, and observing the fastidious keeping of many of the parks and grounds about them, one would suppose that the land was not made to be grazed or trodden upon, even where worthless for any other

purpose, and that the presence of an animal to run at large in the enclosures, was a contamination of vulgarity not for a moment to be tolerated. All this, to one who appreciates the country in its true spirit, is false and artificial. An open common, with a humble cot or two upon its margin; the huge Oak or Elm along its border, the grazing cow, the scattering sheep; or

"The noisy geese that gabble o'er the pool,"

are more interesting objects in quickening the enjoyment of one who truly contemplates them, than a paradise full of such dull, unspeaking beauty.

Nor does this inattention to animate objects in most cases arise from a grudging of the expense of obtaining and keeping them, but from the want of a knowledge in what to get, and how to manage the creatures which are required for the purpose. A resident of the city, getting up a country place, where himself and family are to spend their summers, knows that he wants his horses. For them his stables are built and furnished, to all required extent and convenience. He knows, also, that he must have a cow or two to furnish the daily mik for the house; possibly a pig to put in the "pen," and eat the offals of the kitchen; and perhaps, a dozen hens to furnish the new laid eggs, so dear to all good housekeepers; with any quantity of dogs to guard the premises; and, though he does not think of it, to become an intolerable nuisance by their depredations among his neighbors. His horses—for he is, perhaps, a man of taste in that line—are good, and such as he takes pleasure in driving or riding after; and he likes, besides, to see his wife and children, and guests, well set up in their driving equipage; but for all the rest he knows or cares nothing.

His cow, which he knows simply as a thing that gives milk, and lives on grass, is probably driven in and sold to him by a cattle-jobber of the neighborhood, and more likely than not of the commonest description of brutes, and disgraceful to any piece of ground but the worst and most obscure lot on the farm. She is, therefore, driven out and kept in obscurity, and shows herself only to the stable-boy, who drives her up, milks, and kicks her out of sight again, as soon and as carelessly as possible. The pig and chickens are got to match, while the dogs, of "mongrel, puppy, whelp, and hound degree," run wild on the place, the only real "lords of misrule" on the domain.

Thus he has no domestic thing around him beyond his horses, or dogs, in the brute creation, which interests him. His meadows yield him only a scanty crop of hay for his horses, and his pastures run waste for want of creatures to crop them, or are gnawed to the ground by his neighbors' breachy cattle. He is, consequently, without anything to arrest his attention in the fields or grounds, and the overgrown grass in his lawn or park—for what is a country house without one or both?—must be weekly cut to keep it in good trim, and he becomes annoyed at the continual expense of keeping a hand or two to clip and rake a scanty coat of shrivelled herbage, or otherwise see it grow up rank and seedy on his ill kept grounds. And, what is the poor man to do? Why, as sensible men do, who have some natural fancy that way, and taste, and *economy*, and liberality enough to get something worth keeping, and ornament his grounds with beautiful, well-bred cattle or sheep. Deer, as in England, he cannot keep; and if he could, they are a creature of no profit. Neither will our American fences hold them, and they are destructive to every young thing of vegetable growth within reach.* But choice cattle and sheep he can get, which may be kept without trouble, and be a source of profit and pleasure. And premising that our friend, who is disposed to take some sensible advice, wishes to make a few inquiries as to what description of stock he wants, a hint or two will be given for his benefit.

* We cannot qui e agree with our correspondent about the deer—unless his remarks apply to our wild deer. The deer of the English parks are perfectly tame, and as easily kept within bounds as any of our cattle. We do not see why they should not be imported into our parks, as well as Short-horns. Ed.

If he delight in a horse, and inclines to breed a colt or two, which may grow up on his farm and make a good family beast or a match of them, for his own riding or driving, let him get one or more fine young, healthy mares, as breeders, and turn them into the park. Let them be at least half-bred "turf horse" in blood. If three-fourths or seven-eights of that blood, all the better, if well selected. They will be great in "wind and bottom" for the road. A mare or two of such material, with each a colt at her foot, will be a beautiful and characteristic ornament to the grounds in summer, keep easily through the winter on the common "fodder" of the place, with a little grain, and grow up to profit and future usefulness. If he love cattle—and he has little business in the country if he does not—let him get, according to his area of ground, one, two, three, or more, well selected Short-horn, Devon, Ayrshire, or Alderney cows, as his soil and fancy may direct, and turn into his park; and if he have still more room, a dozen or two nice, well-bred South Down sheep, to graze after the cows, and give him choicer mutton than any he can find at the neighboring butchers, or even better than he can get out from the city.

If his soil be strong, and his pastures rich, he should take the Short-horns for his cows. They are the largest, most imposing and profitable of all others, where feed is abundant; will give "a bushel" of milk in a day, of the richest quality; and, scattered over his grounds, with their beautiful silky colors of white or red, or more usually, both intermingling in every variety of shade, present the most picturesque group imaginable, as they graze, or stand, or lie ruminating among the trees. If the soil be light, and the pasture shorter, let him adopt either the Devons, the Ayrshires, or the Alderneys. They are all good milkers, when properly selected, and for his governance I will describe them briefly.

The Devon is a medium sized animal, deer-like in its appearance, a full cherry red in color, with a clean delicate head, a high spreading horn, a clear prominent eye, and of perfect symmetry in figure; light, agile, and beautiful; she is docile, perfectly hardy, and easily kept.

The Ayrshire is the "dairy cow" of the Scotch lowlands; a great milker, an exceedingly pretty animal, of medium size, a deep to light red and white in color—the red largely predominating; a low, yet delicate horn; not so light and graceful as the Devon in figure, but of a most domestic, housekeeping appearance, and as useful and profitable a creature as lives.

The Alderney, Jersey, or Gurnsey cow, for she is called all these names—is *the* cow of the English islands on the coast of France. She is largely kept on the Isle of Wight, and in Hampshire and other southern counties of England, by the gentry, for her rich and creamy milk, and delicious butter. She is small in stature, meek and somewhat inferior in appearance, a "crumpled" horn, red and white in color, quiet in temper, usually low in flesh, and requires good feeding to keep her in condition when in milk, and at no time presents that beautiful and imposing appearance of the other breeds. But her usefulness is unsurpassed; and a herd of Alderneys grazing in a pasture, or park, or a paddock, are a pretty sight to look upon.

Either of the above varieties of cow are profitable, as well as ornamental animals to the park or pleasure grounds; and when selected with an eye to their milking qualities, in which they usually excel, none others can equal them. Their value, according to blood and quality, with the breeders, is from $100 to $250 each, but those wanting them for milking qualities alone, and not requiring those choice and high traits of "blood," to which professional breeders attach so much value, may readily obtain them at prices varying from $75 to $150; and many of them, for milking alone, are worth either sum named, better than a common cow is worth her usual price in market

The South Down sheep is a good sized animal, with a snug, compact fleece of medium quality; a black or dark brown face; robust in its figure, and of exceeding ripeness of points. It is emphatically the "mutton sheep" of England, with a dark, venison colored flesh, arriving at early maturity, and giving a "saddle" and "chop" equaled by no other sheep among us. They are exceedingly gentle and quiet in their habits, hardy in constitution, prolific, and easily kept, either in a lean pasture, or in the straw yard. Their value, thorough bred, ranges from $10 to $20.

If a lake, a pond, or running stream lie within the park, the large African, or the White or Brown China, or the Bremen Goose, is a most ornamental, as well as useful water fowl. The African or China, has the long arched neck, and all the grace and beauty of the Swan, and their cry at a distance, is really musical. They are fine and delicate in their flesh, very domestic, and in all but our most northerly climates, quite hardy. They are, with abundance of water, a decided ornament to the pleasure grounds.

There are many spacious grounds and extensive farms in several of our states, where fine herds and flocks of some of the varieties of cattle and sheep described, are kept and bred in great purity, and easily accessible to those who desire them. No well managed country establishment, either of the professional farmer or amateur, can be complete without a specimen of some one breed of choice animals upon it; and when we in America, shall have learned the true art of country life as they understand it in England, no place of any pretension will be found which shall not embrace more or less of these fine varieties of stock within its enclosures, as giving character, finish and effect, to its appointments.

My remarks on this subject, may, I am aware, be thought to "smell of the shop;" but convinced, as I am, that in the United States we are most lamentably behind the times in this important appendage to our country establishments; and referring to a recent conversation with you on this subject, I thus "give tongue" to my thoughts. And I will only add my entire conviction that he who seeks one of the highest enjoyments of country life, can do no better than to cultivate a taste, both in himself and in his family, for the appreciation of fine domestic animals, in which they will find some of their purest and least expensive pleasures. It is so with many who from entire indifference, have become enthusiasts in their love of them; and for myself—though it be egotism to say it—in my own island park of some hundreds of acres, I find no serener pleasure than with my honest shepherd dog at my side, to stroll out among my Short-horns, my Devons, and my South Downs, and amid the summer beauty of woods, and grass, and waters, to call them around me in their joyous fulness, and commune with their gentle natures as one entrusted by a kind Providence with the care of his subordinate creatures, and whose bounty in their beautiful creation, it would be guilt in me to neglect. LEWIS F. ALLEN.

Black Rock, N. Y., Feb., 1851.

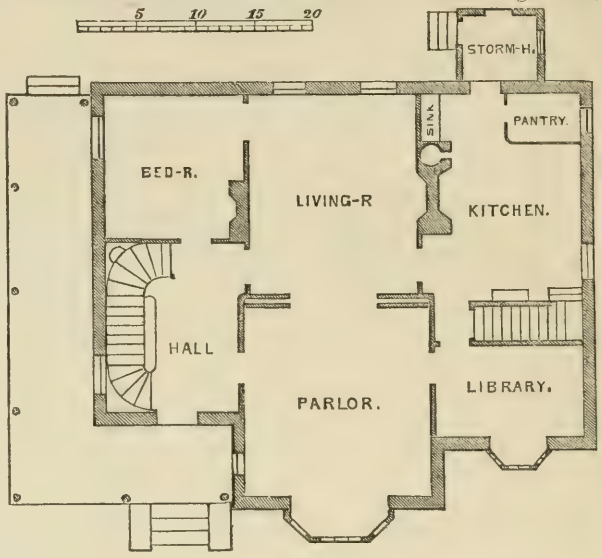
FREESTONE COTTAGE AT MIDDLETOWN, CONN.

(SEE FRONTISPIECE.)

DEAR SIR—As your journal is in part devoted to the progress of rural architecture, I venture to send you the engravings of a beautiful cottage erected in this place by Mr. D. BARNES—which is not only tastefully designed, but one of the best built residences in the state.

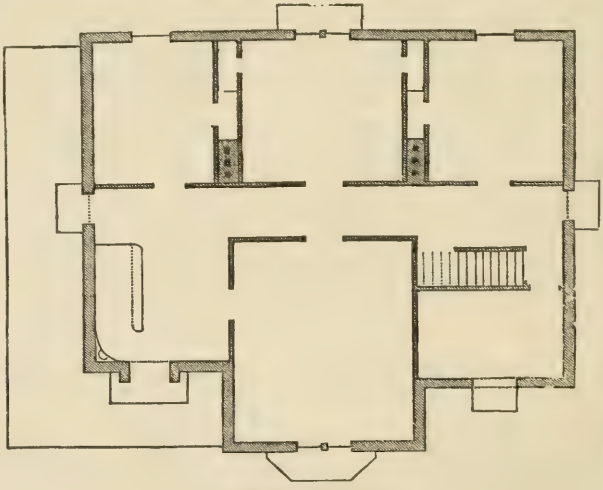
The house stands on the west side of High-street, which is lined on both sides with a variety of beautiful shade trees in double rows, and is emphatically *the* street of the city.

Preparations are making by a gentleman of ability and taste, for erecting a splendid mansion the ensuing season, on a beautiful lot a few rods to the north. Directly in front of the cottage on the opposite side of the street, between the fine residences, lies a little forest of evergreens, ornamental trees, &c.; while on the south, are the beautiful grounds, crowded with the richest variety of trees, shrubbery and flowers, which surround the fine residence of the late RICHARD ALSOP, Esq.



PRINCIPAL FLOOR.

The cottage stands back 100 feet from the street, on a lot having a front of 210 feet, the lines of which extend so far back of the house as to contain two acres, which is well stocked with trees of the choicest varieties from the various nurseries of the country, mostly selected and planted by the proprietor himself. They were planted 2 and 3 years since, in the richest soil, and with extra care; and their unexampled growth has well repaid all the labor and attention bestowed on them.



CHAMBER FLOOR.

Seen from the street, the proportions of the cottage are very pleasing. The length of the building (exclusive of veranda) is 43½ feet, breadth 39½ feet. The basement is divided by brick walls into a vegetable cellar under the south part, a large front cellar, which makes a cool dining room in the summer months, with an apartment in the rear of it for a furnace, coal, &c. The north part is divided into a bathing room and cistern on the east; a kitchen, provided with a cooking range and cistern on the west, and between them, sunk deep in the earth beneath the stone stair-way, is a cold cellar for the purpose of keeping butter, &c. The whole cel-

lar is paved with choice large flagging of the best quality, and laid in water-proof cement, so as to be dry in all seasons. The walls are laid five feet below ground, two and a half feet above. The courses are of single stones, those at the bottom weighing half a ton or more, each. The upper course, two and a half feet above ground, is of single stones, each weighing nearly a ton, hewn and polished in the best manner. Their size may be inferred from the fact, that five only are required to extend from corner to corner across one end of the building, a distance of 31 feet 8 inches. On this course is the water table, which, like the courses below, is laid in cement and lime-mortar, thus effectually preventing any dampness from arising from the walls under it. Above the water table, the stones of the main walls are each one foot wide and thick, by various lengths from two to twelve feet, according to the place they occupy, each stone having been cut and marked for its place. Twelve courses of one foot each, complete the first story, on which is laid a belting course which passes entirely around the building. Above this belt the walls are not so thick, being set back one inch from a line perpendicular with the walls below. The entire walls are laid with the closest possible joints, in a fine grout of lime-mortar and cement, with an outer edge of stone putty, which has hardened like the stone itself, and is perfectly impervious to the weather. All the stones which form the corners are cut in the shape of the letter L, thus locking them together with great strength. Wherever beauty or strength seemed to require it, single blocks of a large size have been used. The arches of the pointed windows are cut from single blocks. The whole of the projection in the second story, over the front entrance, is composed of four pieces, the sill, the sides and the arched top. From this window, as indeed from all the front windows, the view of the city, of the windings of the river, of Portland, and the Strait hills in the distance, is unsurpassed.

The timber, joists, &c., are of first quality chestnut; the joists large, and thickly placed. The floors are of well seasoned lumber, closely laid; the principal one is of one and a quarter inch narrow cypress plank. The roof is covered with first quality shingles, dipped in boiling oil and whiting. They were selected and cut in a semi-circular form, so as to lay like the scales of a fish. All the first floor rooms are wainscoted three and a half feet high. The doors are of black walnut, two inches thick, with mahogany panels. All the wood-work of the first story corresponds with the outward style of the building, the paneling of the doors, wainscoting, casements, &c., being finished with the trefoil or quatrefoil mouldings. No unseasoned or second quality of lumber has been used in the building, and the builder, Mr. E. Rockwell of Middletown, has shown himself a most accomplished *joiner*.

The design for the ornamental tracery at the gables is original. It is a vine running upward to the peak, with carved leaves and clusters. All the hangings for the doors and windows, and other trimmings, are of the best quality.

The labor has not been done by the job, but by thorough craftsmen who understood their business, and were paid the wages such men are entitled to; and there has been, probably, less waste of material than is common in the erection of buildings of half its value.

This cottage is not yet entirely completed, but will probably be finished in a couple of months. The proprietor, Mr. Barnes, I understand, will then offer it for sale to any person whose taste and means would lead him to desire so charming a residence, in one of the most healthful and beautiful towns in New-England. Yours, A Subscriber.

Middletown, Ct., Jan., 1851.

AN ARTICLE ON BEES.

BY H. K. O., LAWRENCE, MASS.

Mr. Downing—Your bee correspondent may be assured from my "experience," of the fact that a queen bee has been produced from a worker's egg. I use the common phraseology. The working bees are barren females; the queen the only fertile bee of the hive. If she be lost, or dies, and there be worms [larva] of some three or four days old, which, under ordinary circumstances, would become workers and barren, the bees select one, and by some treatment which no one has yet satisfactorily explained, so develop its organs as to render them generative—and such bee becomes the mother and queen, so called.

The subject is full of difficulties. For not only is the generative power of such bee changed—but her shape, length of body, and sting. The various writers on the subject greatly disagree. Let me refer to "Bevan on the Honey Bee," and "Huish on Bees," and "Miner on Bees and Hives." In these works the subject is fully treated. The probability is, that, as in most contested cases, the truth lies between the parties, and not wholly on one side.

Some years since, in a single combed hive made for the purpose, an apiarian friend and myself witnessed the experiment. The queen of the swarm, from the nature of the hive, could easily be seen at any time. She was killed by a stab with a long knitting needle. In the course of a few hours the bees were found in great commotion, and continued so for most of the day. When quiet, it was found that a small knot of bees was clustered round a spot near the center of the comb,—and here they continued, till at the end of about fourteen days a queen was seen to emerge from the cell at which they had operated. Whether the worm was a worm, which, if let alone, and no queen were wanted, would have produced a worker, or whether it was a queen-worm, and which, (whether a queen were wanted or not,) would have been a queen, I leave to the theorists to settle. Of the fact that a queen was had, your correspondent may be assured.

To his second query, I cannot reply practically, but should by all means recommend the parting of the hive, and the removal of one of the parts to at least a mile's distance.

To his third query, I reply that the bees in that part of the hive which contains the queen, will, (whether it be the part carried off or the part remaining at home,) be quiet and easy, and keep about their regular business; while the bees in the part which has not the queen, will soon become troubled and uneasy, and begin to run about and travel over the combs in great agitation, as if in search of the queen. This they will do for some hours, until they settle down under the necessity of the case, and get to work on the process of procuring their new queen.

Your correspondent appears to keep his bees in a city; now, although I have known bees to do pretty well in town, they do much better in the country. The temptations of the town lead many bees, as well as many bipeds, into dangerous and deadly places. In the early and warm spring, before the honey-yielding flowers have blossomed, and in the late summer, after they have withered,—the sweet odors of the confectionary shops, of the sugar and molasses stores, allure the industrious wanderers, and they, improvident against the danger, and supposing that they can get out of the door or the window, or escape from the sugar box or molasses cask, as easily as from the petals of a flower, are unhappily made prisoners, and perish by thousands. "God made the country and man made

the town," and all the works and places which bear impress of the Deity, are far better for bees as well as for bipeds.

"Rura mihi placent ante omnia"—
The country, the country is the right place for me,
The fields and the woods for the sweet sucking bee.

Still, if it be his misfortune to be tied down to brick and mortar, and a pavemented town, he had better resort to the "non-swarming hives," and depend for the increase of his stock upon some farmer out of town. My limits, or rather your limits, will not permit the space for the details, or I could give a description of one which I have used for years, without its swarming, and have had an annual produce of honey of from fifty to eighty pounds, without destroying a bee. [We shall be glad to have this description. Ed.] Yours, H. K. O.

Lawrence, Mass., Feb. 14, 1851.

THE PYRAMIDAL PEAR TREES,

IN THE GARDEN OF PLANTS.

The most beautiful sight, in the way of hardy fruit tree culture, that greeted our eyes last season, in Europe, was that of the Pyramidal Pear Trees in the *Jardin des Plantes*.

On one side of this great national garden, which, with its parterres, schools and museums, is a vast collection of all that is interesting in Natural History, is a piece of ground of perhaps an acre, somewhat away from the principal walks. It is separated from the rest of the garden, (to which the public has the freest access,) by an iron railing and a gate, which is kept locked. This is the "school of pears"—that is to say, the garden in which Monsieur Cappe, the head of the fruit department, has his house, and more especially his beautiful pear trees—to which he has given up almost the whole of the area allotted to him.

It was September when we were in this garden. We were weary with a day of sight-seeing, and a long ramble through the other different departments of the garden, and though very desirous of seeing M. Cappe's trees, which have become rather famous as fine specimens of the art of pruning, and had come provided with a note to him which would open the iron gate where the trees of knowledge stood—we had almost determined before we reached it, that we would be content with a passing glance from the outside, at what we supposed would present a familiar appearance to our eyes.

But a passing glance through the iron railing soon made us feel that M. Cappe was not a man to be neglected. And patiently we waited till one of the garcons had found him and delivered our note, in order that we might enter the now unclosed gate, and make the acquaintance of the master of pear trees.

We do not wish to depreciate the magnificent pictures in the Louvre, but we must still be allowed to say, that *in their way*, M. Cappe's pear trees are as well worth seeing as any of the great master-pieces of art there. Nobody (with a soul) would think of comparing a Poussin with a pear tree, yet what one of Poussin's grand sylvan landscapes, (in which you can almost feel the tempest that sways the tops,) is to a landscape on a sign-board, M. Cappe's pyramidal pear trees are to the pear trees of common gardens, both in England and America.

Our readers must imagine a level plot of ground, marked off into beds or borders, about ten feet wide, with a narrow alley between. In a straight line in the middle of these beds

stand the pear trees—about ten feet distant from each other. And such pear trees! so symmetrically shaped, forming perfect pyramids of foliage in the finest tapering lines from top to bottom; so healthy and luxuriant, with not a leaf nor branch wanting, and with the utmost possible vigor and beauty of growth, as if not "nice art" had educated them into this shape, but rather they had grown so because it was their nature, and they could not help it; and so laden all over with the finest and fairest fruit—golden, orange, dark bronze red, or tinted with the ruddiest tints of autumn; in short, so altogther the complete and perfect thing as garden pear trees, that we strongly suspect that good MONSIEUR CAPPE has a better understanding with mistress Pomona, than any of us, her Anglo devotees.

Cappe's Pyramidal Pear Tree.

We had a very interesting chat with M. CAPPE about the management of his trees, which we shall give the substance of for the benefit of our readers. We may say, in the first place, that the climate of Paris is so much like our own, that any lesson in open air culture learned there, is worth twice as much as if learned in England. In fact, the pear tree grows but indifferently as an open standard in many parts of England—while M. CAPPE'S trees, almost all of them, had made shoots at the ends of the branches, on all sides, about two feet in length. They had been planted from 10 to 18 years, and were from a dozen to eighteen feet high. None of them were on quince stocks—though Mr. C. admitted the value of the stocks for particular varieties. Neither does he practice root-pruning, but rather smiled at our account of the importance attached to it in England by some of the best cultivators—saying "it is all very well for a cold, moist country—but neither you nor us need it." His pear trees are all worked on pear stocks. They are planted in a good mellow loam—simply trenched two and a half feet deep, and well manured. The trees, as we have said, are planted in borders. These borders are about eight feet wide, and when they are loosened in the spring, the whole top of the border is formed into a hollow, shaped like a shallow pan, two or three inches deep. Over the surface of this is spread a mulching, an inch deep, of decomposed barn-yard manure—which not only shades and keeps the soil cool, but every time the rain falls and fills the basin containing this dressing or mulching of manure, it carries down to the roots their best food. It will be remembered that the soil of Paris is calcareous, and there is, probably, no lack of lime for the growth of the pear.

So much for general culture. Now a word as to *pruning*, which is the great point in which the French excel us—it being in short, the *education* of the tree. "Just as the twig is bent the tree's inclined."

M. CAPPE'S method of pruning, which he was good enough to explain to us very clearly, is simple, and easily understood. Perhaps we should say it is easily explained with the knife in hand, and the tree before one. But as our thousands of readers are not within such convenient reach of the eye, we must do the best we can to make it clear by words.

M. CAPPE confines his pruning to three seasons of the year. In the month of March, or before the buds start, he shortens back with the knife all the leading shoots, fig. 2, *a. a.*—that is, the terminal shoots at the end of each side branch. Of course, this forces out not only a new leading shoot at the end of the branch, but side shoots, *b, b,* at various places on

the lower part of the shoot. These side shoots are left to grow till the *end of May*. They have then pushed out to about four or five inches in length. The ends of all these side shoots are then *pinched off*, leaving only about an inch and a half at the bottom of the shoot.

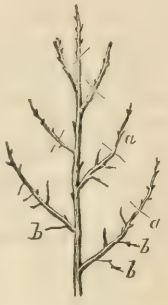


Fig. 2.

Fig. 3. shows one of the branches, with the side shoots, as they are at the end of June. The dotted lines, *b*, *b*, show the point to which these shoots should be pinched off.

The terminal or leading shoot, *c*, is left entire, in order to draw up the sap, which would otherwise force all the side shoots into new growth. Notwithstanding this precaution, in luxuriant seasons the side shoots will frequently push out new shoots again, just below where they were pinched. This being the case, about *the last* of August M. CAPPE shortens back these new side shoots to about an inch and a half. But this time he does not pinch them off. He *breaks* them, and leaves the broken end for several days attached and hanging down, so that the flow of sap is not so suddenly checked as when the branch is pinched or cut off—and the danger of new shoots being forced out a third time is thereby effectually guarded against.

The object of this stopping the side branches, is to accumulate the sap, or, more properly, the organizable matter in these shortened branches, by which means the remaining buds become fruit-buds instead of wood-buds. They also become spurs, distributed over the whole tree, which bear regularly year after year—sending out new side shoots, which are pinched back in the same manner every summer.

Fig. 3.

In order to keep the tree finely proportioned, the eye of the pruner must be a nice one, that he may, with a glance, regulate the pruning of the terminal branches or leaders, which, as we have just said, are shortened back in March—for then is the time to adjust any extravagancies of growth which the tree may have run into, on either side: and in the summer pinching the balance of growth is adjusted by pinching the side shoots that start out nearest the ends of the branches, quite short, say an inch and a half, while those that start near the bottom of the branch, (or the center of the tree,) where they have less nourishment, are left from four to five inches long.

Understanding this mode of pruning, nothing is easier than to form pyramidal pear trees of the most perfect symmetry, and beauty of form. But in order to have the branches regularly produced from the ground to the summit, you must plant a tree which is only a couple of feet high, so that you can form the first tier of branches quite near the ground, by cutting back the leader at the very outset—for if the tree is once allowed to form a clean body or stem, of course it is impossible afterwards to give it the requisite shape and fullness of branches at the bottom.

Our readers will see that we are not giving this account for the benefit of our orchardists. It is a refinement in horticulture which belongs to the fruit garden—but which well repays the amateur or practical gardener, both by the increased fruitfulness and beauty of the trees. From the especially healthy condition of the trees in the *Jardin des Plantes*, as well as from other analogous instances, we are led to believe that by the fine clothing of foliage which protects the bark of the trunk and branches from the violence of the sun, these pyramidal trees will be found less liable to many diseases that attack the pear tree

in climates like France and the United States, than when the trunks of the trees are fully exposed to the sun.

Most of the finer sorts of pears were in full bearing when we saw M. CAPPE'S trees. Beurre d'Anjou, White Doyenne, Seckel, Beurre Bosc, were among the finest specimens of fruit. Bonne des Zees was very highly rated by M. CAPPE. Colmar d'Aremberg was very large and good. Louise Bon d'Avranches—(quite distinct from Louise B. de Jersey, with which it is often confounded, and they are growing side-by-side here,) had heavy crops of fruit. And Belle Alliance, an exceedingly beautiful pear, of large size, pyriform shape, in color a rich orange yellow, with a crimson cheek, and of very good quality, was one of the finest sights upon the tree that we remember to have seen in a fruit garden—so abundantly did it load the trees, and so superb was the color of the pears.

THE POMOLOGICAL CONGRESS AT CINCINNATI.

BY BENJ. HODGE, BUFFALO

DEAR SIR—The American Pomological Congress met at Cincinnati in the month of October last, and I am aware that much disappointment has already been expressed at the non-appearance of its proceedings. It is an old proverb "that large bodies move slow;" but patience, gentlemen—and these proceedings will yet come to light. But is it not very desirable, that for the future we "turn over a new leaf" in this matter, and hereafter take the publishing of the proceedings into our own hands?

The facts were these. The Cincinnati Horticultural Society had procured a room for the use of the Pomological Congress. Here our preliminary meetings were held. Dr. BRINCKLE of Philadelphia, was unanimously elected president. The middle and western states were well represented, but no delegates from any of the eastern states appeared. Soon after the President took the chair, a resolution was offered that the future meetings of the Congress be held on the show-grounds, in connection with the Ohio State Agricultural Society. It was also stated that a tent had been provided for our use, and that the Ohio State Board of Agriculture would be at the expense of publishing our proceedings. This called forth a most animated debate. The show-grounds were about three miles from the city, and, of course, we could hold no evening sessions. Yet the promise of our proceedings being published without expense to the Congress, seemed to carry us by the turning point, and the resolution was adopted by a small majority. Three sessions were held on the ground; but the noise and confusion incident to the place, prevented as much being accomplished as would have been, had the meetings been held in the city. A stenographer was present, who took notes of our whole proceedings, debates, &c., and no doubt, in the course of a few months, the proceedings will be published.

Now, it is not my object in this communication, to find fault with any man, or any set of men, in regard to this matter; but I ask, would it not be far better for the American Pomological Congress to attend to their own matters, and at all times to stand disconnected from that of any other society whatever? There is, perhaps, no objection to holding our meetings at the same time and place of the meetings of any other societies; and, as horticulturists, let us do all we can for the furtherance of agricultural and other kindred societies. But for the future, let the Congress take the responsibility of publishing its own proceedings. A few dollars from each member would pay all the expense. It has also been suggested, that our Horticultural Journals publish the whole proceedings in their pa-

pers by installments. This would be a good move, and there is little doubt but it would add to their subscription list.

While at Cincinnati, we had the pleasure of examining many varieties of fruits, which, comparatively, are but little known in the more northern states. Prominent among these, are the Cooper Apple and the Rome Beauty. Both of these apples are of the largest size, and there esteemed as fine autumn fruits; productive, and very valuable. Of the last named variety, one individual exhibited a barrel. They were of mammoth size, rivaling all others. A long debate arose upon the Cooper Apple, and some of our good friends pronounced it "second rate," "coarse and spongy." This called forth the grit of the good "Buckeyes," and they carried it up to the mark most manfully. Finally, it passed as "a fruit of fair promise." There is not a question but that these are very valuable varieties for the south part of Ohio. They are there cultivated largely for market purposes. The Cooper is a late autumn apple, and probably, farther north, will prove to be a winter fruit, as we were informed that there, the Rhode-Island Greening and Cooper ripened about the same time.

Pryor's Red Apple is esteemed very highly; and that worthy old pioneer horticulturist, JAMES ALLEN, Esq., of Louisville, Kentucky, assures me, in some notes on western fruits, "that the Pryor Red has no superior, and but few equals." Have any of our eastern friends fruited this variety?

Rawle's Jennet, and Kaighn's Spitzenburgh, were also found there in numerous collections, and also highly valued. All these are winter varieties. The last named variety very much resembles the Pownal Spitzenburgh.

The Belmont—of this variety there were numerous specimens, mostly from the more northern parts of the state. It is one of the most beautiful apples in the world. In flavor it may be classed as "very good." I would remark, by the way, that some beautiful specimens of the Belmont, and of many other choice fruits, were exhibited by Mr. KELLY, of Kelly's Island, in Lake Erie. These attracted great attention. More beautiful specimens of fruit I never saw. So bright, clear, and free from all spots or blemish. Are the islands in our lakes and rivers, any better adapted to growing fruits than other places?

Putnam Russet. It is now pretty generally conceded that this, and the Boston or Roxbury Russet, are one and the same fruit. Mr. PUTNAM of Ohio, a descendant of the old orthodox stock, (wolf-killing memory,) was also a member of the fruit committee, and gave us the genealogy of the Putnam Russet—and says Roxbury was its native place. This fruit was exhibited in numerous collections, generally marked "Putnam Russet." Many of the apples were very large, and grown out of the usual form—no doubt true to name, but with a little extra touch of the Buckeye, growing rampant and large.

Surprise, Yellow Injestrie, and Pennock, were found in many collections. The two first named we had proposed to add to the list of "rejected apples." On inquiry, however, we learned that many esteemed them very highly, and that any such move would meet with the most decided opposition. The specimens of Yellow Injestrie were truly beautiful.

It is really worth taking a tour to Cincinnati, to look into the fine vineyards there. Our old friend, N. LONGWORTH, Esq., has about ninety acres devoted to the culture of the vine. And we were informed from reliable authority, that within a few miles of Cincinnati, there are near one thousand acres of land devoted to the growing of the grape. The Catawba seems to be almost the only grape successfully cultivated in the open air. In most of the vineyards, this is the only variety devoted to wine culture. The soil, which

is a clay loam, perhaps somewhat mixed with marl, seems to be admirably adapted to the growth of the grape. The Catawba is much more palatable than the Isabella, and for wine is far superior. Large quantities of wine are made from these vineyards. Wines of various brands—I had almost said "foreign and domestic," Champaign, &c—at all events, numerous brands, some of them in imitation of foreign wines.

The iron green-house of Mr. RESOR, (iron instead of wood,) is a most admirable structure. Had that old incog., "JEFFRIES," been there, he must have admired it, and repented of his strictures on this beautiful edifice. Here were exhibited to us some of the most beautiful specimens of the Black Hamburgh grape I ever saw—very large bunches, and of "most delicious flavor," as we all could well attest without the aid of proxy.

While at Cincinnati, we must needs wend our way up to Mount Adams—there to spend an hour in star-gazing through the monster telescope, the largest but one on the continent of America. On the whole, we were well pleased with our visit at Cincinnati. We had the pleasure of visiting many fine gardens, green-houses, vineyards, &c.; and also of becoming much better acquainted with many of our western horticultural friends; and their kind attention to strangers from abroad, contributed not a little to the pleasure of our visit to the Queen City of the West.

B. HODGE.

Buffalo Nursery, Feb., 1851.

Foreign and Miscellaneous Notices.

LARGE ROSE TREES.—I have often heard amateurs, when admiring some of the large specimens in the nurseries here, express astonishment at their prodigious size, which they attribute to their great age, and good soil. But it must be told, that the system of pruning has as much to do in this matter as the age of the trees, or the soil in which they grow. The oldest of the large trees here cannot number more than twelve years, though there are others much older, not half the size. Often have I seen rose trees full of shoots, nearly all proceeding from the base of the head, owing principally to close pruning. When the knife is applied, whether in autumn or in spring, the greater part must be removed, for there is not room enough for the whole to be developed. Now, it is not the production of a large number of branches I consider injurious: if the tree is in a healthy and vigorous condition, this is natural and advantageous. But why should they not be obtained in such positions that they may be of permanent benefit to the plant—be made to extend its size, and render less thinning necessary? This may be done. Two years ago, after having pruned a number of large specimens, in which I had observed this error, I watched for the bursting of the buds, with the view of practicing disbudding. When they had shot forth about half an inch, I took a knife with a sharp point and commenced my search at the heart of the tree. From here I rubbed off, close to the bark, a great number of buds, leaving only such as, from their position, promised to increase the size or improve the contour of the head. If a bud was pushing where there was a gap, such was left; the others were thinned, leaving those which took a lateral and outward course of growth. Proceeding upwards, I cleared the center of the tree pretty freely, leaving only just so many buds as seemed necessary to preserve it from becoming straggling. Towards the top, and circumference, also, the buds, where crowded, or likely to cross each other, were removed. A month after the first looking over, fresh buds had broken, and thus was opened a prospect of more gaps being filled, the outlines of the heads being still improved, and their size extended. They were looked over again and again, and the same plan followed out. The growth was, in consequence, more vigorous than that of the previous year, and the flowers fine. On the fall of the leaf in autumn, the succeeding course of action was apparent. The trees were pruned as usual, and there was little mind exercised in the operation—little thinning required—no necessity to look at the tree for some minutes before one could determine where to begin; which, in my early attempts, I must confess, I have often done, owing to the interminable interlacings of the shoots. The second and third year the same plan was followed, and the trees are now of handsome form, large and healthy, producing an abundance of good flowers. It should be stated that the first year they were taken in hand, they were watered once a week, for two months, with liquid manure.

The sole reason for this was, that the soil in which they grew had become impoverished. We apply the plan of disbudding to pillar and weeping roses, as to others, by rubbing out any buds that may appear disadvantageously situated. In the youngest stage of the tree, the buds left to produce flowers and flowering shoots for the subsequent year, should stand about six inches apart on the main branches: intermediate buds should be rubbed out. The laterals produced in after stages, may also be disbudded; but masses of flower being the object sought here, the practice should not be too freely resorted to. A few words on summer pruning or thinning seem called for. If disbudding can be carried out, there is no need of summer thinning; but, if it cannot be, then the latter practice may be followed to advantage. So soon as the plants have done flowering look them carefully over, thin out the weak unhealthy shoots, and even some of the stout and healthy ones, where they approach each other too nearly: each shoot should stand free and exposed on every side. It is surprising to see how stout and firm the shoots become, and how the leaves increase in size after summer thinning. The summer kinds submitted to this treatment usually continue their growth by the elongation of the main shoots, the buds on the axils of the leaves remaining dormant; but, with the autumnals, the buds push forth the entire length of the shoots, and the second flowering is complete. The trees are improved in both cases, for the shoots grown at this period will produce the finest flowers in the subsequent season.—*Paul's Rose Garden.*

Charcoal is an impure form of carbon, and is manufactured on a large scale for the purposes of the arts. The process of manufacture consists in exposing to heat billets of wood, or other organic matter, under such conditions as either wholly or partially to exclude the air. Charcoal has several properties which render it of value to the cultivator. As a manure, it does not act by furnishing carbon to the vegetation; because it is, in reality, one of the most indestructible substances known, and remains for an indefinite length of time without change. But it is remarkably absorptive of certain gases which it retains within its pores in a state of high condensation. A fragment of freshly burned charcoal condenses as much as ninety times its bulk of ammoniacal gas, and thirty-five times its volume of carbonic acid. As these two gases form the principal organic food of plants, it is obvious that charcoal may have a powerful individual action upon their growth. The experiments of Saussure and others, have shown that plants flourish with great luxuriance when the atmosphere in which they grow contains more than the usual amount of carbonic acid. Charcoal, after having absorbed carbonic acid and ammonia from the air, places plants under favorable conditions for receiving and appropriating a larger than usual amount of this organic food. The only difference is, that instead of entering the plant by the leaves, they reach it through the roots, which absorb the rain water containing these gases, washed out from the charcoal. Thus, charcoal, from its absorbtive nature, becomes an indirect means of increasing the supply of carbon and nitrogen to plants. Different kinds of charcoal have varying values in this respect. Experiments made by exposing freshly burned pieces of charcoal to the air, showed their different absorptive powers, by the increase in weight after they had been exposed a week to the atmosphere. The charcoal from fir gained 13 per cent. in weight; that from lignum vitæ, 9.6; that from box, 14; from beech, 16-3; from oak, 16.5; and from mahogany, 18. Charcoal also possesses the property of absorbing and retaining the odoriferous and coloring principles of most organic substances. It is, on this account, used for removing the putrefactive taint from foul water, or other putrid substances. When used as a filter for foul water, both the smell and color are removed. From this deodorising property charcoal is frequently mixed with night-soil, and other decaying manures, which it keeps free from smell, and at the same time aids in preserving, by absorbing the gases which would otherwise escape. A mixture of charcoal and burnt clay is frequently used for this purpose with excellent effect. Charcoal, when employed as a manure, acts, to a small extent, by presenting, in a soluble form, the ashes of the wood from which it was prepared; but this action is only temporary, and of small importance, when compared with its principal point of utility, viz: its power of absorbing from the air the gaseous food of plants; and therefore, of presenting it in a more condensed form, and in greater quantity.—*Professor Playfair, in Morton's Cyclopedia of Agriculture.*

Dwarf Pinks of Verviers.—Liege and Verviers are the only two towns in Belgium in which the Pink, including all the different kinds and classes, is held in honor; and there are in these towns extensive and influential societies for the promotion of the culture and exhibition of this flower. Even at Brussels amateurs would scarcely believe that the growers belonging to the towns already named, can exhibit pots of Dwarf Pinks in which from 180 to 200 flowers may be counted; and yet nothing is more common in these localities where the cultivation of the Pink is established. We may easily perceive with what class of the population the cultivation of Dwarf Pinks is most in favor. If the Pink is not the flower of the rich, neither is it that of the poor. It has more of dignity and greater value; it is the flower of honest labor. At Liege, for instance, the most industrious and the most moral part of the population is that including the colliers, who are famous for the good management of their window gardens, which comprise, in a great measure, these Dwarf Pinks. The same observa-

tion applies to the artizans and mechanics of Verviers.

In a treatise published by Hoog [? Hogg,] in 1820, we find mentioned the double Dwarf Carnation of Liege, having the flowers sessile, or without much stem. There is also mentioned a Tree Pink, having an under-shrub-like form, growing from five to six feet high, and which was grown on a trellis against a wall. It appears evident that the Dwarf Pink was unknown before the 19th century; and it is not less clear that this interesting creation originated in Belgium. The Dwarf Pink is, indeed, a remarkable plant, and confined to the banks of the Vesdre and the Weay, two rivers of Verviers and Spa. All the dwarf varieties formerly belonged to the series known as bizarres, the petals being fringed; but at the present day it is the custom, at Verviers, to make all indistinctly dwarf. Thus we see dwarf bizarres, dwarf picotees, dwarf flakes, and so on.

There is, however, in cultivation, particularly in the trade, a race of Pinks having flowers smaller than those of the primitive species. They are generally rose purple, red, striated, or white; rarely yellow, or varied in the ground. These Dwarf Pinks would thus seem to claim kindred with the old bizarre, from which they are derived. At the recent exhibition of Pinks, held under the auspices of the Horticultural and Agricultural Society of Verviers, we had occasion to notice the excellent management which these Dwarf Pinks receive in that quarter. Of these, the productions of Messrs. L'Enfant were particularly deserving of notice. M. Barhon, also, had two specimens, the one having 184 flowers, and the other 178. These were indeed astonishing productions, combining all that is grateful in odor, elegant in form, and ornamental for the drawing-room conservatory.

The Dwarf Pinks of Verviers grow about four inches high: the stems are crowded with blossoms, the number of the flowers being very great; the corolla of a delicate rose color, with the variations. The aroma of these flowers is very agreeable, and nothing can be more suitable for the boudoir or parlor. To produce a specimen such as those alluded to, requires about three years of careful cultivation. These Dwarf Pinks are usually grown in pots, painted outside of a deep green color, and from five to six or seven inches wide at the rim. The most favorable aspect for them, if grown at a window, is that where they may have full exposure to the sun for the greater part of the day. The reflected warmth of the window-sills is also beneficial to their roots. The pots are not quite filled with soil, but to within about an inch of the rim; and, as the leaves extend, and cover the border or rim, a humid atmosphere is maintained around the stem or neck of the plants. [Abridged from *La Belgique Horticole*, a very interesting new periodical, edited by Prof. Morren, for *The Gardeners' Magazine of Botany*.]

THE PROPERTIES OF THE CARNATION.—*First.* The flower should be not less than two and a half inches across.

Second. The guard or lower petals, not less than six in number, must be broad, thick, and smooth on the outside, free from notch or serrature, and lap over each other sufficiently to form a circular roseate flower, the more round the outline the better.

Third. Each row of petals should be smaller than the row immediately under it; there should not be less than five or six rows of petals laid regularly, and the flower should rise and form a good bold centre or crown; and in quantity should form half a ball.

Fourth. The petals should be stiff, and slightly cupped.

Fifth. The ground should be pure snow-white, without specks of color.

Sixth. The stripes of color should be clear and distinct, not running into one another, nor confused, but dense, smooth at the edges of the stripes, and well defined.

Seventh. The colors must be bright and clear, whatever they may be; if there be two colors, the darker one cannot be too dark, or form too strong a contrast with the lighter. With scarlet the perfection would be a black; with pink there cannot be too deep a crimson; with lilac, or light purple, the second color cannot be too dark a purple.

Eighth. If the colors run into the white and tinge it, or the white is not pure, the fault is very great; and pouncy spots or specks are highly objectionable.

Ninth. The pod of the bloom should be long and large, to enable the flower to bloom without bursting it; but this is rare; they generally require to be tied about half way, and the upper part of the calyx opened down to the tie of each division; yet there are some which scarcely require any assistance, and this is a very estimable quality.—*Glenny's Properties of Flowers.*

THE GREAT DISCOVERY IN VEGETATION.

All our readers may not have heard of Mr. RUSSELL COMSTOCK, and the fundamental secret of vegetable growth, which he claims to have discovered. As he is now before the Legislature of the State of New-York, asking for the "paltry sum" of $150,000, we feel bound to lay his statement, (which we copy from a newspaper published in the county on the Hudson where he lives,) before our readers.

"THE GREAT DISCOVERY.—Under the agricultural head, on the first page, will be found another appeal from Russell Comstock for legislative aid, to enable him to make known his great discovery in agriculture, which, he says, when universally understood, will be a great blessing to mankind.

If the advantages to be derived from it are as great as Mr. Comstock promises, we are sure the Legislature will no longer withhold from him the paltry sum of $150,000."—*Pough. Eagle*, Dec. 21, 1850.

"*Benefits obtainable from the Discovery in Vegetation. Experimented upon fourteen years.*

General Outlines relative to the discovered Natural Principle advantageous to Agriculture. See Bill No. 395, which was referred to a committee of five, who unanimously reported *complete*, April 6, and passed the Assembly yesterday. See Assembly Document No. 23, of 16 pages.

1st. That the discovery is a Law of Vegetation.

2d. That it will introduce the sweet potato and almost all other crops, into higher latitudes.

3d. That it forms a rule by which to cultivate.

4th. That plants cultivated according to it, will have a more robust constitution, will endure greater excess of drouth and rains; will be more uniformly productive; will be less liable to be preyed upon by insects.

5th. That it will introduce the best modes of cultivation, and perpetuate them.

6th. That by the discovery the common modes of cultivation can be demonstrated to be erroneous.

7th. That by it the comparative value of manures will be better tested and known.

8th. That by it the *annual* potato rot will be prevented. [☞ The recent occasional *excessive* rot is referred to in the appendix.]

9th. That when known it will be a national honor.

10th. That it being an idea or knowledge of a certain law in nature, and the practice not altogether new, although the objects to be obtained by the practice are new, it cannot be patented.

11th. That the copy-right laws cannot protect it. They protect words only.

12th. That the admitted best judge of Boston said, "It is one of the prettiest things in the world, because any one could use it and nobody know it."

13. That the discovered principle has 3 practical bearings on the cultivation of plants; and when comprehended commends the practice instantaneously.

N. B. That the laws of all *civilised society* are intended to protect their discoverers.

☞ *Three committees*, after knowing the secret, have *unanimously* recommended it to public patronage. RUSSELL COMSTOCK. *Albany, April* 10, 1850.

APPENDIX.

14th. That the sun will rise to morrow is a moral certainty, but the existence of this newly discovered principle in vegetation, can be demonstrated to a philosophical and mathematical certainty, as the discovery is founded on self-evident facts; a knowledge of which, from its nature and importance, should be one of the first lessons to be taught to a young agriculturist, in a state agricultural school or elsewhere; to the young lady who would rear her house plants successfully, as well as to all gardeners, and also worthy of the attention of all who value improvement in art and science, and in the condition of our species, *man*.

15th. That in the cultivation of all agricultural crops, a knowledge of the principle is essential, to know how to preserve the vitality and healthy growth of the plants.

16th. That the discoverer's system of cultivation is formed by a combination of discoveries.

17th. That he has discovered the cause of the excessive potato rot, and an economical and natural method of preventing it, almost to a moral certainty.

18th. That the bonus or reward of $150,000, which is suggested in said Assembly Document, No. 23, by eighty of the principal tax payers of the town of the discoverer's nativity and residence, and others of Dutchess county, when paid by the state, will be a powerful stimulus to cause all terra-culturists to test the existence of this discovered principle in nature experimentally; a practical knowledge of which will cause them to abandon their traditional mode of cultivation, and to adopt the improved system, which is in direct opposition to their traditional custom, and therefore may require (to be quickly introduced,) the most powerful stimulants, conviction, interest and popularity, to make the inroad on their custom.

19th. That the honor of the Republic demands legislative action on the subject without delay, even should the discoverer demand of the state the amount which he had encouragement to believe congress would appropriate eleven years since, say three quarters of a million, instead of this state's proportion of that amount, but he has never set any price.

20th. That the want of lobby-money, to cause honorable members of the legislative bodies to read all the proofs, may have been

the principal reason for the inactivity of Congress and the state legislature.

19th. That on the 22d ult. Hon. Dr. Peter Crispell, Jr., of Ulster county, who was chairman of New-York Assembly Committee on Agriculture, in 1849, stated to the discoverer, and Mr. Rutzer of the Poughkeepsie Hotel, and others, that this year, an unfavorable year for *Maize*, for the first time, he had grown more than 100 bushels of shelled Indian corn to the acre. When the discoverer explained the principle of his botanical discovery to the chairman, in Jan. 1849, Mr. Crispell told the discoverer that he thought the information worth —— dollars to him, although he had no right to use it. And on the 22d ult. he pronounced the preceding description of the discoveries "very good."

Hon. Judge O. Titus, of Dutchess county, used the same expression after perusing it a day or two before, confirming with pleasure the letters that he had written on this subject, to members of Congress and the state legislature.

That during the present year the discoverer has applied his system of cultivation to the growing of the sweet potato in Dutchess county, N. Y., and, as in all other cases, where he has applied it to any species of plant for the first time, his success has far exceeded his expectations, growing them in good garden soil,—without artificial heat, manure or sand—in 95 days after the 21st of June, more than eight inches in circumference.

The discoverer will add, that each and every individual to whom he has ever explained a confidential knowledge of this law in nature, has admitted that to the extent of their ability to judge, the undersigned is the orignal discoverer.

Said bill No. 395, for testing the practicability, utility and value of the improvements and discoveries, passed the Assembly only two days previous to the adjournment of the last legislature, the Senate laying it on their table; a portion of that honorable body assigning as a reason, that as the bill anticipated a conditional appropriation for defraying the discoverer's travelling expenses, no member of the legislature could be constitutionally one of the testing committee; a member of the Assembly being on the committee as the bill passed the Assembly.

Hon. A. J. Downing was in Europe during the past season of vegetation, and Hon. E. P. Prentice of Albany county, President of the State Agricultural Society, and one of its principal founders was substituted. And after the adjournment of the legislature the committee agreed to examine the subject; for which purpose the discoverer called on the committee in April, May and June, and again, to learn their conclusion, on the 8th and 9th inst., when the committee stated that they considered the existence of this newly discovered law in the vegetable kingdom, "*self-evident*," when exhibited and understood; and that as far as either of them could judge, the undersigned was the first discoverer of it; and that neither of them had been able to detect the discoverer in error in any of his various positions relative to his discoveries and system, nor in anything that he had said on the subject.

The committee, on the 8th inst., agreed to present the subject to the New-York State Agricultural Society on the 15th of January, (its annual meeting,) and solicit the society to apply to the legislature to cause the discovery, or discoveries and system to become public property.

Yesterday Judge —— of Dutchess county, said, "that there was one thing about this subject that he could not understand, and that was, that the discoverer apparently could get the recommendation of every person to whom he imparted a confidential knowledge of his discovery and system, commending to the public, either the principle or the practice, or both; and as yet, no efficient legislative action on the subject; to him, he said, it was incomprehensible; that he could not comprehend it."

But the people *must now* "come to his rescue," or the discoverer must abandon it again, as he did ten years ago.

As civilised society has no law to protect such discoveries, the discoverer asks of each citizen who is not incredulous, some direct or indirect aid, for the benefit of the human race, and for the honor of the age in which we live. RUSSELL COMSTOCK. *Mabbettsville, Dutchess Co., N. Y., Dec.* 12, 1850.

P. S. The reader who takes an interest in this subject, (and who does not?) will please attract the attention, (per mail or otherwise) of some member of the legislature to it, and also show it to members of the State Agricultural Society. R. C." *Poughkeepsie American, Jan.* 11, 1851.

Domestic Notices.

Gen. Hand Plum.—Being a constant reader of the Horticulturist, I have noticed several articles on the Gen. Hand Plum, and as its origin seems somewhat of a mystery,, and as I happen to know all that is known about it, I have taken the liberty of addressing you on the subject.

The tree from which the original graft was obtained, grew on the late Gen. Hand's place, on the Conestoga, about a mile from Lancaster, Pa., and if living, would now be fifty or sixty years old. About thirty years ago, Mr. George Miller procured a graft, and succeeded in raising it. The original tree died shortly after. Mr. E. W. Carpenter, nurseryman, of Lancaster, Pa., procured a specimen of the fruit about 1831, and as it was of an uncommon size, measuring about two and a quarter inches in diameter, I made a drawing of it for him, as I was in the habit of doing as fast as his standards came into bearing. He budded a number of trees, and sent grafts (among the rest,) to his brother, S. Carpenter, of Lancaster, Ohio, and Robt. Sinclair, Baltimore, and thus introduced it to notice. The drawing in the Horticulturist, though correct, is not as large as I have seen the fruit. It is supposed to be a seedling.

I would also bring to your notice another plum, introduced by E. W. Carpenter, viz: the Montgomery Plum. He found the tree, (a very old one,) some twenty years ago, in a dying condition, on the premises of Mr. Montgomery, and procured four grafts, one of which grew. I have never seen the fruit itself, but he describes it as a very large oval purple plum, and of a most delicious flavor, and very prolific. He has had them as large as a hen's egg. The wood and fruit somewhat resemble the German Quetsche, (blue prune,) though the tree is of a more vigorous growth, and more prolific. Dr. Eli Parry of Lancaster, could doubtless procure you some of the fruit next summer. Having obtained a few grafts, I shall test it here. Yours respectfully. C. G. Siewers. *Cincinnati, March* 5, 1851.

[We are obliged to our correspondent for his concise and detailed account of these fruits. Ed.]

Boiling Water for Peach Trees.—It has been thought impossible to recover a tree badly infected with the yellows. If the following experiment on a peach in this condition will prove of any use by saving the trees of others, it is at the service of your readers.

Many of our peach trees perished during the winter of '49. Others bore no fruit the following summer, and were deeply infected with the yellows, and were accordingly cut down and their roots grubbed up. One or two trees, however, in the same condition, were overlooked, and left. A friend, who is a successful fruit culturist, happened to walk into the garden, and observing a tree bad with the yellows, and hearing an intention of cutting it down expressed, cried out, "By no means, by no means, you can save it!" This was about the commencement of autumn. The tree was evidently dying—leaves yellow, stems full of dried withered fruit, and the root very gummy. He immediately caused a basin to be excavated round the trunk, and the gum and worms to be taken out thoroughly with a sharp knife; while this was doing he applied himself to heading in the branches, lopping off from one foot to three, as he thought necessary; cutting away all the dead spurs, twigs, and fruit, and pruning out superfluous branches of sound wood. This done, and the litter all carried off, he ordered a copious supply, (2 or 3 gallons) of boiling water poured round the trunk where the excavation was made. Whether it was the pruning of the limbs, the scraping about the base of the tree, or the boiling water, those wiser in pomology than myself, must decide; certain it is, however, that an influence quite magical was exerted on the peach, for in two or three weeks it put out fresh and abundant foliage, of a deep green, and continued full of verdure till late frost. [Boiling water is a most excellent application in the spring of the year, for diseased and feeble peach trees, and is a certain remedy for the peach worm. We presume from our correspondent's description *of the tree*

in question, that its yellow leaves and sickly habit, were the result of the attacks of the peach-worm—since he says nothing of the small *wiry shoots* and *diminutive leaves* that are the infallible symptoms of the yellows. The latter disease pervades the whole sap of the tree, and after many experiments, we believe it to be incurable. The best thing to be done is to dig up the tree infected with it, and burn it, root and branch. Ed.]

Insect on the common daily, or China Rose. This rose, a favorite with me, because independently of its beauty, it is easily cultivated, has been a source of disappointment for several successive seasons during the first flowering time of the summer. An insect resembling the bumble bee, (humble bee,) has been the depredator. It is, however, not half so large as the insect named, and of a dark color. Its attacks commence as soon as the buds begin to show the red leaf, and more vigorously as they are near unfolding. They eat around the edges of the petals, and scoop out the forward or half blown roses, in the form of a bowl. They have been killed by slapping the hands quickly together over a bud, before they are aware, thus catching two and three at a time; a continual succession, immediately, however, has supplied the place of those destroyed, and after a time they also become shy, ("biding their time") from the efforts made to kill them. In one season, those destroyed amounted to over three hundred.

"The rose is *sweetest* when 'tis budding new,"

says Sir Walter Scott, and so thought these vagrant bees; for not a full blown rose, nor even half expanded bud, could be had while the first blooming season lasted, after which time the bees found some other employment, or their race was run for the summer; for they would return no more until the summer of the succeeding year.

I was told the insect was called the Carpenter-bee, and misled by the name, hoped to find its haunts in the wood of some old building or hollow tree, but being disappointed in tracing them home, the roses were given up in despair. Last summer, however, the retreat of the bee was discovered in the claying or plastering of an out-door oven. The bees were found playing about numerous small holes they had bored in the sides of the oven, to and from which they had free ingress and egress; and even, in order as it may be presumed, to afford every facility for the infirm and delicate visiting the inner chambers of the habitation without exposure, they had many table-like galleries raised on the surface of the oven, communicating with the holes leading to the interior chambers, and with each other, after the manner of a labyrinth;—these were about the thickness of a finger, and made of finely wrought clay. No time was lost in destroying this populous city. It is only to be regretted that numbers of the inhabitants escaped, and, perhaps, that some forbearance was not exercised toward them for a time, in order that the internal arrangement of their dwellings, the larvæ, &c., might have been laid open for inspection, and curious investigation into their habits. What is the name of this insect? It seems decidedly of the *masonic* fraternity.

N. B. These bees attacked no other roses, although there is considerable variety in the garden, Yours. J. C. W. *Washington Co., Maryland, Jan.* 10, 1851.

Raising Early Peas.—The course prescribed by your correspondent in the March number, for starting peas early, is certainly a good one, and worthy of the adoption of every lover of so rich and healthful a vegetable. We have tried another plan to effect the same results, which, although it may be no better, we have no hesitancy in commending to at least a trial. In the first place we dig a trench where we design to plant our peas, to a depth of, say six inches. This we fill two-thirds full of recent horse manure, and make it as compact as possible, which will leave a space of three or four inches between it and the surface. Over the manure, put an inch and a half of the garden earth, and sow the peas. We then take two straight-edged boards and nail them together in the form of a V. This is laid, inverted, over the peas, when it is cold enough to freeze the ground, and taken off in mild pleasant weather. They may be protected in this way until they are high enough to bush, and enjoy all the advantages of rain and sunshine where they are to grow. If the storm is heavy, they may also be protected from it, by replacing their covering.

As the spring advances, the hot and dry nature of the manure might, under ordinary circumstances, be injurious to the plants; but this we provide against. When our peas come up, they are an inch perhaps below the surface, and the earth taken from the trench, is some of it yet remaining to supply the deficiency. So when the peas are high enough, and the weather growing milder, we replace the earth until the trench is level with or higher than the adjoining surface. This gives strength and firmness to the plants, utterly destroys all weeds which may be starting from the manure, and prevents the heat and dryness of the soil which is incident to placing hot and fermenting manures near the surface. We speak of this method which we have found in our case to be a very good one, and leave for others to adopt or reject as they choose. Yours truly, Wm. Bacon.

Raising Grapes in Pots.—If you will write an article for the Horticulturist, describing in detail the best method of raising grapes in large pots, (say of the size of 16 inches high by 14 inches diameter across the top,) under glass, and without fire heat, naming just what the soil should be, the watering, &c.—how much, if any, liquid manure had better be used for them, &c.—also how productive they can be made under proper culture, &c.—also as to the expediency of having a house on purpose for grapes in pots, and the kind of house for them if expedient—I name these details that you may see what points information is needed upon—if you will do this, you will much oblige an original subscriber in New England.

[Will some of our most experienced grape growers comply with the above request? We have already published two or three articles on that subject. Ed.]

Cheap Vineries and Vine Bordres.—Having read with much satisfaction, your article upon the construction of cheap houses for horticultural purposes, and their perfect adaptation to the cultivation of choice fruits, and that being a subject to which I have paid much attention, I cannot but think the subscribers to this Journal, many of them, must soon become much interested in it. They would derive more real pleasure in a few leisure hours devoted to the cultivation of choice fruits, grown under glass, than from any other source, it being a pursuit of which a person seldom tires, for the farther he advances the more interested he becomes. In the first place, let us see how this object is to be accomplished. You have pointed out the way of growing fruits in cheap houses, and a field is now open where practical men can add their experience. Many persons who have hitherto been disposed to commence something of the kind, have been in a great measure deterred on account of the expense of the materials employed in the construction of houses and the formation of vine borders. I allude now to "cold houses." In houses heated by artificial means there are expenses which it is impossible to avoid. We will suppose a man wishes to erect a cold vinery. His first question will be, what is the shaped house I require. He refers to the cut of Mr. Rivers? This kind of house answers admirably in England, but will it do as well in this country. Now I do not positively mean to assert that it will not, but I feel certain that one built in the following manner would answer much better for this climate at least.

It should be 2 feet high in front, and the back wall should be at least 10 feet high, and the width of house 14 feet, which would give the roof a better pitch, and prevent any great weight of snow from lodging, and also prevent a deal of drip, and as the vines would have to be brought up on a trellis under the glass, it would give the operator more room to attend to his vines. The frame work of the house might be boarded with planed and matched stuff as it is so much neater in appearance than rough boards, and the difference in cost between the two is so very trifling as scarcely to make it any object in point of economy. The back wall should have strips nailed on to the posts to form a trellis on which peaches, apricots or nectarines can be trained, and let me here remark, that I have never known an instance of stone fruit of any kind being attacked by the curculio that has been grown under glass. If some of your correspondents, who cultivate stone fruit under glass, would let us know if they escape in their different localities it might be worth reading, as it would then prove if it may be relied on as a general thing or only partially so. I have

been using for some years a very cheap and durable wire trellis for training vines under rafters, which I will describe: take some common hoop iron, 1 inch in width, and cut up into lengths of 10 or 12 inches; then punch two holes two or three inches apart, and one hole at the other end about 1 inch from the end, and large enough to allow of the wire which is intended for the trellis to pass through easily; then take some 1½ inch clout nails and fasten the pieces of iron to the rafters. Begin on the first rafter at 18 inches from the plate, and so on in succession, so that each piece shall be exactly 18 inches from the other on the rafters. It is however, immaterial whether the distance be more or less, provided equal distance is observed. After all the pieces are nailed to the rafters, pass the wire through the holes, form the wire into a loop at one end—take a two inch wrought nail with a large head, put it in the loop and drive it home—that secures that end. Then strain the wire, drive another nail half its length, give the wire one or two turns round the nail, then drive it home, and the wire is secured. After all the wires are put in, parallel with the length of the house, take some small annealed wire, fasten one end to the bottom trellis wire and carry it up parallel with the rafter, and 6 inches from it, taking a turn round each large wire to keep it in its place. Each rafter or vine will require two of these wires. The pieces of iron should not hang perpendicularly, but stand out at an angle to correspond with the house. The materials for a trellis of this description for a house 14 feet wide, will not cost more than one dollar for every 10 feet in length. In glazing a vinery, use the best cylinder glass, that which is free from waves or blisters, for if a poorer quality is used it will be impossible to get rid of the burning of the leaves, unless the glass is whitened. The first cost will be a little more, but the better glass will ultimately prove the cheapest. The interior of the house may be devoted to the cultivation of vines in pots, or for raising early vegetables to transplant into the garden. Such a house as this can be put up, painted, glazed, the trellis built, and all made complete for about four dollars the running foot, or a nice snug little house 25 feet long and 14 feet wide for $100, such a house being, in fact, only a slight variation of Mr. Rivers', with the addition of more room. Trees are to be trained on the back wall, and vines under the rafters. Now let us see what such a house is capable of producing when the vines and trees come into full bearing. Nine rafter vines which will produce from 20 to 25 pounds of grapes annually, or two hundred pounds for the whole, (this is not an over estimate,) worth from 50c. to 75c. per lb. The trees on the back wall will produce from 20 to 25 dozens of peaches, apricots or nectarines, worth 3 or 4 shillings per dozen. The interior of the house I make no estimate on, as it is not my intention to mislead by making over estimates. I should like much to see amateurs take this thing in hand, not on speculation, but from the pleasure they would derive from it—also to give the people at large some idea of what the duties of a gardener are, and the qualifications he ought to possess, a thing but imperfectly understood in many parts of the country, and which frequently ends in disappointment, either through gentlemen being imposed upon by ignorant and inefficient men, or else that the talents of a really good man are not properly appreciated on the part of the employer, which I must say is too often the case.

For vines grown in pots, I would recommend the following mode for each pot. Procure a box or tub a few inches larger than the diameter of the pot, bore some holes in the bottom, place a block of wood two inches thick and about six inches square on the bottom of the box, and set the pot on it. Then put in two or three inches of charcoal or broken bricks. Then fill in the space between the pot and box with tan bark. By this mode the roots will not suffer from too rapid evaporation, which is very injurious to young vines; the block is to prevent the roots from running out of the bottom of the pot.

We are told by very many experienced cultivators, that unless we use an immense quantity of certain kinds of manures, in the formation of the borders of vineries, it is impossible to raise good grapes. Now I do not mean to say this is all idle stuff, because the grapevine, being a gross feeder, requires a great deal of stimulus, but what I will say is that most excellent grapes may be grown in the following

manner. If the soil is wet and cold, drain it well, trench it 2 feet deep, and put in plenty of old lime rubbish and rotten manure. If the soil is a good loam and does not lay low, trench it 2 feet, and to every layer of earth put on a layer of old rotten dung. The manure from old hot-beds is the best for this purpose; in the absence of that, use the best that can be had. I prefer wide and shallow borders, say two feet deep and 20 or 24 feet wide. Such a border as this will cost no more than for an asparagus bed the same size, but it should be mulched with rotten manure every summer, and forked in in spring. I would like to give my method of attendance to the vines during the growing season, but fear I have already extended my notes too far. Yours most respectfully, Wm. Webster. *Rochester, Feb.* 4, 1851.

[We shall be glad to have our correspondent's routine of vinery culture. We are not in favor of excessive feeding of vine borders—but we do not think a border will continue to give good grapes for many seasons, unless it contains at least *one fourth* of its whole bulk of good active animal manure—stable manure we prefer. Ed.]

Planting Strawberry Beds.—Pray give a new subscriber, who has not your back volumes to refer to, some plain directions for making a few strawberry beds, for the supply of a small family. When is the best season for planting; what are the best sorts, and how shall the soil be prepared? Yours. A. H. *New-London, Ct.*

Answer.—The month of April is the best time to plant strawberries in the whole year.

If you wish the largest and finest fruit, you must make the soil *deep* and *rich*. The best manure for the strawberry, is either poudrette, (we can recommend that of the Lodi Manufacturing Co., New-York,) or decomposed stable manure. If you have these, trench the soil two feet deep, mixing in a very liberal dressing of either of these manures, throughout the whole depth. Supposing, as is too often the case with beginners, that you have nothing but fresh stable manure, then, when you are trenching, bury this stable manure in the lower spit, (i. e., the lower of the two feet trenched.) To give it a good manuring, you should trench in as much stable manure as will be equal in bulk to one-third of this lower foot of earth. The reason for trenching it among the lower spit is, that it may be decomposed before the roots of the strawberries reach it. If mixed with the top spit, it would do more harm than good.

Having thus trenched and manured the soil, form it into beds three and a half feet wide. Draw three lines lengthwise through the beds, and set the young plants along these lines, about 4 inches apart. During the summer, the beds must be kept stirred with the hoe, and all runners should be cut off, that extend more than a couple of inches beyond the lines. You will thus have three *rows* of strawberries about ten inches apart—between which, the next season, you can lay straw or tan-bark, which will both keep down the weeds, and keep the fruit clean. This straw or tan may thereafter keep its place—the runners must be kept clipped, and a little additional straw or tan laid over the plants at the approach of winter, and removed again in the spring.

In this way—digging in a top-dressing of spent manure or poudrette between the rows every spring, your strawberry beds may be kept in good condition for four years—at the end of which time they must be abandoned, and new ones planted to take their place.

If, however, you do not wish the trouble of cultivating the plants so carefully, then plant them in the same way, and allow the runners to cover and occupy the whole bed. This they will do the same season, and the next year will give you an abundant crop—the fruit not so large as in the first case, but perhaps rather more in quantity. But the bed will only last one year, and you must make a new one every spring, to supply the place of the old one.

As to sorts, if you are to plant but three, let them be Large Early Scarlet, Burr's New Pine, and Hovey's Seedling. If four, add Rival Hudson; if five, Swainstone Seedling. There are many other good sorts, but this selection will probably prove most valuable to you. The *White-wood* is a nice, delicate, small fruit, and bears a long time, and is a pretty contrast in a dish of red strawberries.

Making New Lawns.—As we have had numerous inquiries lately, repecting the laying down of grass surfaces for lawns, we shall compress our answers into one, and make it public

for the benefit of all our readers interested in the matter.

A fine lawn, as every one knows, is the most essential ground-work of all ornamental pleasure grounds. It is not so easy to get a fine lawn here as in England, but quite as easy as on most parts of the continent. What we have to contend with, are our dry summers and hot sun—which often parch up and turn brown a lawn made in the ordinary way. This is not to be guarded against, as some suppose, by enriching the top-soil where the lawn is, but by making it *deep*—so deep that the roots of the grass, instead of depending on the top layer of the soil, which always suffers by the heat of the mid-summer sun, shall run down to the cool under layer, eighteen inches or more deep—which preserves a more uniform moisture and temperature.

If you are preparing the ground for a new lawn, let the first point, then, be to deepen the soil. It ought to be at least 18 inches, and is better if two feet deep. If it is a small surface you can prepare it by trenching—if large, by using the sub-soil plough. It is well to mix a good coat of manure with the sub-soil while this is going on—and it is just as needful (or even more necessary) that the sandy soil should be as deep as clayey—for unless the sub-soil is well stirred the roots of the grass will not penetrate there.

The soil being well prepared, and the surface made quite even and smooth, sow it with a mixture of *blue grass* and *white clover* at the rate of three bushels to the acre.* There should be about two quarts of white clover seed to a bushel of blue grass—all mixed intimately together before sowing it; and if a quart or so of *sweet scented grass* is mixed with the whole before sowing, the lawn will give out a delicious odor every time it is mown. The seed should be sown in a still day (if just before rain so much the better) very evenly, by hand, and the ground should be lightly raked, and if possible rolled afterwards.

* We formerly recommended *Red-top* and White Clover; but some careful experiments of different grasses for a lawn have satisfied us that the *Poa pratensis*—known in various parts of the country as "bent-grass," "blue grass," "green grass"—which grows by the road sides in most parts of the country, is superior to the Red-top—being a closer, and finer, and greener turf, and enduring the drouth better than the Red-top.

To keep a lawn in good order order it requires in our climate, to be mown about once a fortnight—with a sharp, broad-bladed lawn scythe. In England, we found *mowing machines* in very general use for this purpose, and when there is much lawn to be mown they would be found of equal or even greater value here. One of these machines is small, and is managed by hand; the other requires a man and a horse, and will mow as much in a day as six good mowers,—rolling the lawn as it mows it—and mowing the grass as neatly and evenly as if it was done with a pair of shears.

Rural Hours.—We have already spoken of Miss Cooper's charming hand-book of nature and the seasons, published last winter under this title. But lest any of our readers, and especially our fair readers, who would study nature, now in her freshest and most winning garb, should not yet have made its acquaintance, we must be allowed to allude to it again. The way to enjoy the "Rural Hours," is to take the book in hand daily, and read it as the season unfolds itself—for it is a diary of nature, telling us of every bird, and flower, and rural incident that makes part of the out-door life of country people. Make its acquaintance, study it in this way, and you will feel as if the author were a personal friend, who knows nature's sweetest secrets, and lets you into all her confidences.

To Propagate the Scarlet Japan Quince.—Being afflicted with deep horticultural propensities, I have, as a matter of course, been led to "try all things, and prove all things," in the true *horticultural* sense of the quotation. I was exceedingly desirous of obtaining a large quantity of the *Pyrus Japonica*, for the purpose of using it for a division hedge. I tried various modes of propagation. Firstly, by grafting on the stock and on the root; by layers, which seldom took root; by cuttings of the roots, which method did *pretty well*. But not being satisfied, I made another experiment, which resulted in complete success.

Having had occasion to move two large plants of the scarlet variety, and one of the white, I was obliged, very unwillingly, to take them up after they had bloomed, and just before the leaves were fully expanded. *Severe pruning* was necessary in this case; and when I beheld

the tops of my beautiful bushes lying on the ground, my propensity seized me, and I could not consent to throw away the trimmings without an effort to save them.

So down I sat, on the edge of the border, and after cutting off all the last year's growth, I placed them in a warm, rich soil; but I confess, without *faith*, even to the extent of a *hundredth* part of a grain of "mustard seed."

There I left them, for weal or for woe, exposed to the full blaze of *almost* a summer's sun. I passed by the spot every day for a week, and each time thought how many fruitless experiments I had made, and this very one likely to be another of them. Several weeks passed away, when I thought I would visit my cuttings, and to my utter astonishment, every one of them had grown, and made nice plants by autumn! This is a horticultural fact.

I have a few now on hand, which I would gladly present for the benefit of some one, who may be even now, as *verdant* in these matters as I was, previous to my *sufferings*. Thy sincere friend. E. S. *Hillside, Cayuga Co., N. Y., 3d mo., 3d*, 1851.

[We thank our fair correspondent for her useful notice, and shall be glad to hear from her again. Her postscript, in which she frankly owns herself "a real live-woman horticulturist," pleases us still more. When American women know their gardens in this way—by actually shaking hands with garden tools, daily—then they will begin to enjoy them in right earnest. Ed.]

Camellias in Rooms.—I have tried for two years to bloom Camellias, but without success. I have Elegans, Donkelarii, Variegata, Candidissima, Derbyana, Florida, Tricolor, and Imbricata. During the first year, I had them in my sitting room, enclosed in a glass case, which was aired every day. The room was warmed by a furnace, supplied with air from without the house. The thermometer in the room, ranged from 60° to 70°. In the case, it was much lower. They were frequently syringed above and beneath the leaves, and occasionally wiped with a wet sponge. The second year, they have been kept in a closet, adjoining my counting-room. The closet has a large window looking south, and receives its heat from the counting-room, which is itself heated by steam pipes. The thermometer in the main room ranges from 60° to 70°, and in the closet, will be 10° lower. The plants were kept back from the window and in the shade. The window is opened for fresh air, whenever the weather will permit—and I have a tub filled with water, warmed by a steam pipe, whenever used for watering the plants, or to make the air of the closet of a proper degree of moisture. The closet is 12 feet by 6, and 11 feet high. During the summer, the plants were kept out of doors, and in the shade. I get buds, which swell and promise, and show the tip of the beautiful petals within, and then become "done brown," drop and perish. What is the matter? Yours, A Floral Enthusiast. *Lawrence, Massachusetts, March* 10, 1851.

[The Camellia is one of the worst plants for close rooms, as it wants a great deal of air, and a very uniform atmosphere, to bloom freely. If you can contrive to ventilate your room or plant-closet so as to have a stream of pure fresh air (warmed of course) pass through it, we think the flowers will open well. Ed.]

Cherries—Pear Blight—At a sale of French fruit trees, in New-York, April, 1841, I purchased with others, over fifty cherry trees, under the names of White Bigarreau, Red Bigarreau, Guine of Turkey, Bigarreau de Lyon, Royale Hative, Black Griotte, &c., but on their passage home the labels were lost; none proved to be better sorts than we had, except one kind, and that I supposed to be the Bigarreau de Lyon, and have so called it. I have never seen the cherry described in any foreign or American horticultural or pomological work, until in your Jan. Horticulturist, where you describe a cherry as "The Great Bigarreau." The shape, size, color and flavor, appear to be identical with the sort I have. It has sometimes ripened a little before the Tartarian. It has a remarkable growth; the foliage is larger and longer than any I have seen, and I consider it the most desirable cherry known. If among the list above named, you think I have selected the right, you can adopt it, or wait until the bearing season, and I will send you samples of the wood, leaf and fruit.

Soon after the purchase alluded to, I commenced setting pear trees on quince stocks, (although told by my neighbors that they were

short lived, and would not pay the cost,) and they have succeeded well; borne early and profusely until the last summer, and dwarf pears have now become popular, and are much sought for here. Out of about three hundred trees, I have lost forty-five, thrifty and full of fruit, by blight. What is the cause, and what the remedy? I have not seen anything satisfactory on the subject. My plum trees are very productive, for the benefit and ravages of the curculio only; covering with gauze, salt, lime, and mulching, have entirely failed. My next experiment will be with pigs and chickens. Very respectfully yours. LEWIS EATON. *Buffalo, N. Y., Jan.* 12, 1851.

[The cause, in brief, of your pear blight, is the tenderness of the sap vessels of the foreign pears, whereby they suffer in the heat and cold changes of our variable climate. The remedy is to wind straw ropes round the stem and larger branches of your dwarf trees, and mulch the surface of the ground over the roots. A cultivator of our acquaintance, who lives in a blight district, and who made wry faces for years, over the blight, has become a cheerful and happy man, since he has practiced this simple method. It is useless to go into long arguments—there is no end to them on this subject—but "a word to the wise," etc. ED.]

A BUDGET OF QUERIES.—*A. J. Downing, Esq:* May I trespass on your kindness by soliciting answers to the following queries:—

1st. What is the best way of composting the leaves of the forest for manure? [By treating them with the lime and salt mixture described in Hort. Vol. iv. p. 202.]

2d. Will unleached ashes or lime most readily promote the decomposition of leaves? [Either—but the latter will act most speedily.]

3d. Which in "your opinion" are the four best pears for *market cultivation*, (2 of them on quince and 2 on pear roots,) out of all the old and new varieties? I mean four most suited for this eastern climate and this naturally poor gravelly soil—four out of the vast collection—of a thrifty and vigorous growth. I know and appreciate the qualities of the Bartlett and Louise Bonne de Jersey, but would not a cultivator be at his wit's end to keep up the prices and sell 300 bushels of either the above named varieties, provided these sorts continue to be cultivated by "every body?" [No fear of an overstock of fine pears—no one will see it in our day. Your question is difficult. We should say Bartlett, Louise Bonne de Jersey, Vicar of Winkfield, and (if it answers on your soil) Black pear of Worcester.]

4th. Which is the best Raspberry for market cultivation, taking into consideration tenderness, firmness, and productiveness? [The true Red Antwerp.]

5th. How near may be planted the different varieties of squashes and melons without fear of mixing. For instance I have a two acre field, one-half of which I should like to devote to squashes next summer, and the other half to melons. Would the quality of each be deteriorated by so doing? [Will mix if nearer than 100 feet.]

6th. If the flavor of melons should become injured (a little squashy) the first year, would the 2d crop, planted with the seeds of the first, be liable to a further deterioration? [Of course, but so far as we have observed the *fruit* is not affected the first year, only the *seed*. The second year the mixture becomes apparent in the fruit.]

7th. Which is the best water-melon and the best winter squash? [The Spanish water melon and the Autumnal Marrow squash, are two very superior sorts.]

8th. Can plum trees be grafted in the spring with success, instead of the usual way of budding? [Yes, very easily, if by whip-grafting—but cleft-grafting requires more skill in the plum than in other fruit trees.]

9th. Does it injure apple pomace to be exposed to frosts, before planting in the spring? [How "in the spring?" The seeds should be freed from pomace as soon as possible in the fall.]

10th. Is it necessary that pits and seeds of fruit be buried in the ground to suffer the action of the frost, if planting be delayed till spring? [The action of the frost is not needed. What is needed, is that the seeds be kept moist in damp earth during the winter, and if the earth is not froze at all, so much the better. If the seeds have become dry it will be necessary to soak them for half an hour in hot water—not quite boiling—before planting.]

11th. Can you give me any information in

regard to the invaluable mineral substance recently discovered in New-Jersey. It will work miracles, mixed with ashes, on our unfertile land. You may have had means of knowing at what expense it might be obtained in Newark or New-York? [Know nothing of it, and will be glad to learn what it is.]

With sorrow at troubling you with so many queries, mixed with joy at being allowed to seek all this information at the fountain head, I remain your friend, A. J. R. *New-Bedford, Mass., Feb.* 6, 1851.

Horticulture in the Interior of Georgia.—Although but a recent subscriber to your valuable periodical, I have been an interested reader of it for some two years past, and I venture to offer an article for publication in it, if you think it will prove acceptable to your subscribers.

I am a native of the valley of the Mohawk, and have spent some thirty years of my life in it; but for the last twelve years have been a resident of Habersham county, Ga., a section of country comparatively little known at the north. My chief intention is to give your readers a short history of its location, geological formation, its native fruits, flowers, &c. Habersham county lies in the northwest corner of the State, and mostly on the first *steppe* of the Allegany range of mountains, some 3000 feet above the ocean level; its climate is unequaled for salubrity in the United States, the thermometer rarely rising in midsummer to 90° during the day, and at night usually about 60°, while our winters are mild, with but little frost and snow; and now, while writing this, I am sitting in my room with the sashes up and the door open. Our summer nights are delightful and cool, so that one always needs a blanket when sleeping, for covering. Billious fever, that scourge of the south, never intrudes here, nor the insinuating consumption of the north; consequently Habersham is a place of resort for the rice and cotton planters of the lower portion of the state. The soil is poor upon the hills and upland, and in the vallies and bottoms, rich and productive, and composed of the elements of granite, the primitive formation of the mountains here. No cotton is raised here, it being too cold for it to mature well; corn, wheat, rye, oats, and all the grasses succeed as well as at the north. Farming is conducted very rudely, but is improving, owing to the influence of agricultural papers and societies. I wish you could see a southern plough, such as are used here in the mountains. It would be a great curiosity to a New-York farmer, were he to find one in the road. I am sure he could not tell for what use it was intended, or to what nation of people it belonged.

In this county is situated the far-famed falls of Tallulah, and the beautiful fall of Toccoa, both worth a trip across the Atlantic to be seen in the month of June, when thousands of Rhododendrons, Kalmias and other flowers and shrubs which surround, are in bloom; and were some of your experienced manufacturers, only to see the number of splendid water-falls here, wasting their power in obscurity, and as it were, inviting and tempting them to come and use them, almost for the using alone, they would, I think, forthwith be off to Georgia, notwithstanding the great bug-bear to northerners, Negro slavery.

The forests are almost unlimited in extent, as the country has been settled but about 35 years, with a present population of 8000 whites. The forests are composed of say 8 or 10 kinds of Oaks, the same of Firs, Chestnut, Hickory, Walnut, Poplar, Gum, Birch, Holly, &c. Wild grapes abound here; Fox grapes and Muscadines without number, in this and the adjoining counties of Rabun and Union; and by the way, we have three varieties of native grapes that possibly may prove valuable for cultivation. One of them is a large white grape, about the size of the Isabella, but sweeter. Another, a red grape about the same size, a little more acid, and the other a small white grape about the size of Herbemont's Madeira. None of them are known, except in the neighborhood, where they are still growing wild in the coves of the mountains. I am unable to give the botanical character, as I have never seen them when in flower. I have them all in process of domestication, and will if desirable give you the results.

Foreign grapes thus far do well. We have the white Burgundy, white Muscat and some others, all which grow in the open air; the rot occasionally attacks them, but judicious manuring is a remedy for it. The rascally curculio takes all of our nothern plums, nectarines, cherries,

and apricots. Last year we thought to be rid of his presence, as the previous year we had a frost in April, which killed all the fruit. We had neither apples, pears, plums, peaches, nor anything else in the fruit line, within 50 miles of us. But lo! this year, "Monsieur Tonson come again," and more than ever. Where did he come from? Not from the fruit that fell from the trees the year previous, for we had none.

We have some fifty varieties of your best northern apples, and as many of pears, all which succeed very well. Also some fine native apples; and I should like to send you, (if the distance was not so great,) a barrel of them, to compare with your Newtown Pippins and Spitzenburghs, &c. Much attention is being paid, for a few years past, to the cultivation of fruits—and this county can probably boast a larger variety than all the rest of the state together. Thus far, cherries do not succeed, from the splitting of the bark when about three years old; the cause we cannot ascertain. Some suppose it to be caused by the heat of the sun; I doubt it, as the temperature of summer is below that of Albany or New-York. Peaches flourish in perfection, and native trees do bet- than northern, of every description, and come into bearing sooner.

I intended to say something about our southern shrubs and flowers, when I began, but as this article has reached such a length, I fear if I should say anything more, you will not print it, and if you should, your subscribers will not read it; so will defer it for another time. Yours respectfully. J. Van Buren. *Clarksville, Ga., Jan.* 23, 1851.

Native Bone Earth.—The discovery has been made, recently, of an "inexhaustible quantity" of native phosphate of lime, near Dover, New-Jersey. It has been analyzed by Dr. Chilton, Prof. Mapes and Dr. Antisell, separately, and pronounced by them to be superior as a manure, to the bone dust usually sold in New-York market. The legislature of New-Jersey, we understand, passed a bill last winter, chartering a company for working this mineral manure, and putting it into market extensively—but Gov. Ford has vetoed the bill. Perhaps the Gov. means that his own state shall be made fertile first. If this manure corresponds to the expectation formed from the published analyses, it will be in great demand for grain crops and fruit trees—especially pears.

The Value of Carrots.—Very few persons are aware of the fact, that young carrots are among the most wholesome of vegetables, and greatly *assist digestion*. French cooks, in many of their stewed dishes, introduce small slices of young carrots, and the *Julienne* soup, so common on every French table, is seasoned with finely chopped vegetables—young carrots being the most important, and the difference in digestion between a dinner eaten at a French *cafe*, and an English hotel, is not alone in the cooking, but in the vegetable condiments introduced. It is only lately that the chemists have explained the digestive stimulus known to exist in the carrot, to consist in a peculiar acid —*pectic acid*—found in this vegetable.

After saying so much, with a view to the promotion of a better understanding with the carrot in our kitchen gardens, we quote the following in corroboration from the *Working Farmer*, calculated to increase the field cultivation of this useful vegetable:

"Two bushels of oats and one of carrots, is better food for a horse than three bushels of oats; and when used for light work, the quantity of carrots may be increased. With such food horses will enjoy good health and spirits, a loose hide, shining coat, and improved digestion. It may be thus explained: The carrot is very nutritious, and, in addition, has the curious property of gelatinizing the watery solutions contained in the stomach of the horse. Carrots contain *pectic acid*, a single drop of which mixed with the juice of an orange or other fruit, immediately turns it into a jelly, and the Paris confectioners use it for this purpose. Soups in which carrots have been boiled, are always gelatinous when cold, and are more easily digested when used as food, than soups otherwise made.

The bene plant has similar properties. A thin slice of this plant thrown into a glass of water, renders it ropy and gelatinous, and for this reason it is a specific for summer complaint with children.

By examining the dung of a horse fed in part on carrots, it will be found to contain no undigested hay or oats, and therefore less quantities of those materials are necessary than when half the amount swallowed is parted with in an undigested state. For fattening animals the carrot is equally valuable, and for milch cows they surpass any other food. The milk of a cow at mid-winter fed on carrots, is equal in flavor to that supplied from clover in summer, while the

butter made from the milk is finely colored and highly flavored.

In soils containing proper proportions of bone-dust, sulphuric acid, potash, and common salt, 800 bushels of long orange, or 1100 bushels of white Belgian carrots may be easily raised per acre, while the same land will not produce one-tenth the quantity of oats. We have sold our crop of carrots this year to the livery stable keepers of Newark, at 50 cents per bushel, and we could have sold another thousand bushels or more at the same price."

Answers to Correspondents.

Evergreen Hedges.—*A Friend to Improvement,* (Northampton, Mass.) We prefer the Norway Spruce to the Hemlock, for a hedge, because it grows faster, and makes a stronger barrier. As the shoots of the latter tree are slender and pliant, they require to be sheared many years before they form an impenetrable hedge. In point of beauty, there are few hedges that surpass a hemlock—as some fine hedges near Philadelphia bear witness. Plants six to eighteen inches high, are the most suitable. Your soil would be improved by trenching, or sub-soil ploughing.

Painting.—*E. B. P.*, (Springfield, Illinois.) You have painted your house a drab, and the cornices, window-dressings, &c., a brown-stone color. The best effect, then, for your blinds, will be obtained by painting the frame of the blinds the same dark brown, and the slats, or luffer boards, the same drab as the house.

Rose Seedlings.—*A Lover of Roses,* (Franklin Co., Pa.) To raise roses from seed, you should gather the seeds when fully ripe, divest them of the pulp, mix the seeds with sand, and put this sand in a flower-pot or box, covering the surface with something to prevent the mice from devouring the seeds. Then place the pot or box in the cellar, and keep the sand moist. When the spring opens, sow the seeds in a common hot-bed, and when the plants are about an inch high, transplant them into a rich, light border, shading them till established. When the seeds are sown in the ordinary way, they frequently lie two, and sometimes three years, before vegetating.

Grape Border for Vineries.—*J.* (Philadelphia.) Your border must not be less than 14 feet wide and 2½ feet deep. If the sub-soil is porous, so that it drains itself, that will answer; if clayey, you must make the border three inches lower, filling the bottom with brick-bats and oyster-shells, and cutting a drain from the lowest side of the border, to carry off the wet. Taking it for granted that the natural soil, where the border is to be made, is a good loam, let your border be composed as follows: One-half loam, one-fourth stable manure, one-eighth broken oyster-shells and bones, and one eighth decomposed vegetable matter—such as decayed leaves from the woods, decomposed black earth from swamps, or sods chopped up. To a border of this kind, 25 feet long, add a cart-load of leached wood ashes, and a peck of plaster of Paris. The whole should be mixed very thoroughly together. The best three or four sorts for a cold vinery, are the following—Black Hamburgh, Muscat of Alexandria, Royal Muscadine, Grizzly Frontingnan.

Stowell's Sweet Corn.—*R. S. Knight,* (Waterloo, N. Y.) If you refer to the article again, you will see that the seed is to be had of Prof. Mapes, Newark, N. J., and not of us.

Pruning.—(*West Jersey.*) The best time to head-back the old forest trees you describe, is immediately before the sap starts. Brush over the wounds, in all cases, with the liquid shellac, (gum-shellac dissolved in alcohol, to the consistency of thin paint,) described in our work on Fruits.

Cherry Tree Grubs.—*C. P.*, (Granville, O.) Push a small wire into all the holes containing the grubs, and thus kill all you can. About the first of May, coat over all the trunks and larger branches of the trees affected, or liable to be attacked, with a mixture of soft-soap and tobacco-water, put on as thick as it will work easily from the brush. If you leave it till June, it will be too late—the grub coming out in a winged state then, and depositing its eggs in the bark. The same treatment for the apple-tree borer. Dont prune your apple trees for the mere sake of pruning. If the limbs do not actually interfere, you had better let them alone.

Dissolving Bones.—*J. R. S.*, (Clarksville, Ga.) To dissolve bones, provide a strong cask, fill it three-fourths full of bones—(broken into pieces if you wish to save time.) Pour over them a mixture of sulphuric acid, (oil of vitriol, which may be had at the druggists for 2½

cents per lb.) and water, in the proportion of one measure of acid to eight measures of water. In ten days, or a fortnight, the bones, or most of them, will be found dissolved—and if any remain, a fresh dilution of acid can be applied to them. Whatever acid remains not taken up, should be poured into the compost heap, as it is a very powerful manure. If you cannot procure acid, you may bury a large mass of bones in a heap in the earth; they will heat, and gradually decompose of themselves—to aid which, pour hot water over them before covering them up. They are usually ground in a strong mill, without being calcined—when offered for sale as a manure.

Grafting Grape-vines.—*A. M.*, (Detroit.) Bury your grafts in a cool, shady place, covering two-thirds of the lower part, till the stocks that you wish to graft have begun to grow, and their leaves are as large as a shilling. Then graft, and you will be successful. The great flow of sap, almost destitute of organizable matter, in the grape-vine, often prevents the graft from uniting with the stock, when set at the usual time.

Peat Earth.—*A. P. W.*, (Columbus.) The common black earth of swamps is of no value as a fertilizer in its raw state—being "sour," or full of acid. It will, therefore, do your trees and plants no good for the first year, if put on fresh from the swamp. You must reduce it, either by mixing it with fermenting manure, or by treating it with brine, ashes, or lime slaked with brine. The latter is the best mode. But if you wish to make it ready for immediate use, you can mix it with newly slaked lime—two bushels to a waggon load. Mix the lime in layers through the heap, and let it lie for a week—turn it over and let it lie a few days more, and it will be ready for use.

Insects.—*A Novice*, (Bangor, Me.) If you spread coarse refuse salt over your garden and field, at the rate of six bushels to the acre, as soon as the land is fit for working, you will destroy the cut-worm, (the white grub that destroys your vegetables,) and benefit the land.

Hedges.—*A Massachusetts Subscriber.* You inquire about our silence respecting the Arbor Vitæ as a hedge plant. We consider the Arbor Vitæ the most valuable and useful of all our native evergreen trees, for an inside hedge, or *screen*—but it is hardly fit for an outside hedge, except in civilised parts of the country, like Massachusetts, where animals are not allowed to run at large.

Girdled Trees.—Fit in a piece of bark from the limb of another apple tree, either all round, or on one side of the spot that has been girdled. If you do it neatly, binding the whole up tight, and covering it from the air by a plaster of grafting clay, the strip of bark will unite like a graft, and the tree will be saved.

Plum Tree Warts.—*J. G. Pease*, (Dutchess Co., N. Y.) The branch you sent is not affected by the black wart. The eggs deposited there would hatch, and the branch perish without any wart occuring.

Transplanting.—*H. H. Coit*, (East Cleveland, O.) We are not aware that any of our nurserymen grow evergreens for sale by the thousand. Traders in native evergreens are in the habit of supplying large quantities of the most popular sorts—such as Balsam Fir and Spruce, at about $4 to $6 per 100, one to two feet high—packed in crates. The larger number of these trees come from Maine, and a line addressed to Col. Little, Bangor, Me., would probably obtain for you the details of this trade. Your best course regarding foreign evergreens, will be to import them *early* next fall, from English nurseries. Rivers of Sawbridgeworth, Skirving of Liverpool, and Whitley & Osborn, Fulham, all deal extensively in these trees. Write for a catalogue with prices, and then send your order through Harnden & Co., N. Y., or any shipping house with whom you can deposit the money—or buy a bill of exchange, and send it in your letter containing the order. The Italian grape you mention, (*Pitsiotella*) we do not know. *J. W. Gray*, (New Fairfield, Ct.) Trees are of the best size for transplanting from the woods to the nursery, at from 4 to 6 feet. Shorten back the tops well. If they are to be sent a distance, cover the roots with old cotton bagging, and the tops with straw. The seeds of the Hickory nut should be planted in the fall.

Special Manures.—*An Orchardist*, (Morristown, N. J.) The reason you failed to get any good from the top-dressing of lime and ashes that you gave your fruit trees, is, from your account, very plain to us. Your trees have com-

pletely impoverished the ground where they have been growing and bearing, without any new supply of food for fifteen years. Nothing that you can apply as a mere top-dressing, will restore such trees—whether in the shape of animal or mineral manures. Clear off all the old soil over the roots—taking care not to injure or cut them. At the outside of the principal roots, dig a trench all round the tree—18 inches deep. Throw aside the old exhausted soil in this trench, and replace it by new soil from the corner of some good pasture field, where it has laid fallow for years. Mix with this soil a heavy dressing of good stable manure, or rich compost of any sort, that you may have. This will give new life to the exhausted constitution of the tree. If you now add a bushel of ashes, and half a peck of air-slaked lime to the new soil that you must put in the place of that which you took from the surface roots, your trees will be well supplied with both organic and inorganic food. Both are needful; and absolutely necessary as lime, and potash, and phosphates are to the growth of trees, they can no more live upon these in a worn-out soil, than a man can live on salt, and pepper, and mustard, with no beef or bread to go along with them.

Insects.—*Owen T. Hobbs*, (Randolph, Pa.) The eggs of the peach tree insect we do not recognise—will be able to say what it is if they hatch.

Horticultural Societies.

Pennsylvania.—The stated meeting of the Pennsylvania Hort. Society occurred on Tuesday evening January 21st, 1851—the president in the chair. Owing to the precariousness of midwinter, contributors do not risk fine specimens of plants; hence displays are less attractive. One small collection, however, of a very interesting character, was shown by Robert Scott, foreman to Robert Buist, consisting of Forsythia viridissima in flower, and exhibited for the first time, Epacris nivalis, E. purpurascens, E. coccinea, Correa multiflora rubra, C. bicolor, Erica Wilmoreanei, and Clerodendron splendens. James Ritchie presented a beautiful seedling Camellia, and a large collection of cut Camellia flowers, of the choicest varieties. Designs, baskets of cut flowers and bouquets, were unusually handsome. Of fruit, a few dishes of apples only were seen. The committee on this department, reported that they were regaled on New Year's day with Hamburg grapes, which had just been cut from the vine under glass, by William Johns; the merit consisted in the mode of *preservation*, being ripe last October, and retaining their freshness and flavor. This result was effected by darkening the house, thus checking the growth of the vine, with occasional circulation of air to prevent moulding. Of vegetables there were four large displays of the finest esculents. Thomas Meehan, gardener to A. M. Eastwick, (Bartram's Garden,) exhibited a dish of blanched dandelion plants, the leaves of which are eaten as salad, and by some much relished.

The committee of finance reported as to the correctness of the Treasurer's accounts and favorable state of the investments.

The special committee on the accommodations of the Society submitted a lengthy report which was ordered to lie over for consideration.

An interesting communication was read from Dr. John Dawson, (formerly of the city,) dated Cape of Good Hope, South Africa, Nov. 8, 1850, purporting that he had procured of the "Botanic Garden Commission" of the Cape, a package of seed, and had forwarded the same to the Society, and desiring a reciprocity.

At the annual meeting, the following officers were elected for the ensuing year:

President—Caleb Cope.

Vice Presidents—Gen. R. Patterson, Jas. Dundas, Joshua Longstreth and E. W. Keyser.

Treasurer—John Thomas.

Cor. Sec'y—Thomas C. Percival.

Rec. Sec'y—Tho. P. James.

The stated monthly meeting for February, occurred on the 18th. The President, upon taking the chair, addressed the society, tendering his thanks for the marked expression of confidence in his re-election, dwelling upon the usefulness of the association, and alluding to its prosperous condition, remarking that of late some little extravagance had crept into its management, which only required investigation to be remedied, and reiterating his intention to retire at the termination of the year.

The display on the occasion, consisted of two fine collections of plants. In that from R. Buist's houses, were three new and interesting specimens—the *Boronia anemonifolia*, *Erica levigata* and *E. aurantiaca*, which were seen for the first time. Among A. M. Eastwick's plants were many choice species. Three sets of Primula sinensis were presented by John Lambert, Robert Buist, and A. M. Eastwick's gardeners. Displays of cut Camellias, which were unusually rich and extensive, were from

the houses of James Ritchie, Robert Buist, John Lambert and John Dick. Two very large vases, supporting pyramids of the choicest cut flowers, exhibited by Andrew Dryburgh, were much admired. Of fruits, there were a few dishes of apples. Of vegetables there were three very large tables from the gardens of Anthony Felten, Joseph Ripka and Miss Gratz.

The appointments of standing committees for the ensuing, year was announced.

Members elected.—Sir Wm. Jackson Hooker, London, Eng., John Dawson, M. D., Burmah, E. I., to honorary and corresponding membership, and three as resident members.

THO. P. JAMES *Rec. Sec.*

BUFFALO.—The annual meeting of the Buffalo Hort. Society, was held February 19th,

President, LEWIS EATON, in the chair.

On motion, T. Burwell, Esq., was appointed Secretary, pro. tem.

The Treasurer, A. A. Howard, read his report, which shows a flourishing condition of the finances.

The Society then proceeded to the election of officers.

Lewis Eaton was re-elected President, but declined the office, and

On motion of H. B. Potter, his declination was accepted, and the thanks of the Society tendered him for his valuable services.

On the second ballot, BENJAMIN HODGE was unanimously elected President of the Society for the ensuing year.

Vice Presidents—Abner Bryant, H. B. Potter, Joseph G. Masten, and Jas. W. Brown.

Cor. Sec'y—W. R. Coppock.

Rec. Sec'y—Jno. B. Eaton.

Treasurer—A. A. Howard.

The following committes were appointed:

Flowers and Flowering Plants—W. R. Coppock, J. W. Brown, F. Bryant, C. F. S. Thomas and E. Ford.

Fruits—L. F. Allen, Lewis Eaton, H. W. Rogers, J. G. Masten and J. Dart, Jr.

Vegetables—J. Sexton, O. Allen, R. Hadfield, S. J. Mills and T. Burwell.

On motion of L. F. Allen, it was

Resolved, That the President, Treasurer and Recording Secretary be constituted a committee on the subject of printing.

Resolved, That the Society hold four exhibitions during the ensuing season—in the months of May, June, August and September.

On motion of Lewis Eaton.

Resolved, That the Society hold monthly meetings throughout the year, at such time and place as may have been appointed at the previous meeting.

MONTREAL BOTANICAL SOCIETY.—At a meeting held in Mr. Garth's Rooms, on Feb. the 20th, called for the purpose of forming a Botanical Society in Montreal—present, Messrs. Shephard, Garth, Taylor, Turner, Small, Archibald, Spriggings, Cockburn, Brown, Carroll, Laurence and Allan.

It was resolved to form such a Society, to be called the "Montreal Botanical Society," having for its object, principally, mutual instruction in the study of Botany, the investigation of Plants indigenous to the country, and the classification and examination of the Fruits cultivated in Canada.

It was resolved, in order that information regarding the structure, uses, and classification of Plants may be more widely disseminated, that a Library be formed principally of Botanical works.

The following gentlemen were appointed office-bearers for the ensuing year, viz:—

President—Mr. SHEPHARD.

Vice President—Mr. Garth.

Treasurer—Mr. Spriggins.

Secretary—Mr. Brown.

NEW BEDFORD.—At the annual meeting of the New-Bedford Hort. Society, held Feb. 6, the following gentlemen were unanimously chosen as the officers of the Society for the ensuing year:—

President—JAMES ARNOLD.

Vice Presidents—Henry H. Crapo, John Howland, Jonathan Bourne, Jr., William P. Jenney.

Treasurer—William C. Coffin.

Cor. Sec'y—John H. W. Page.

Rec. Sec'y—Matthew Howland.

Executive Committee—The President, Treasurer, Rec. Sec'y, L. B. Keith, Matthew Luce, James H. Collins, and James Moores.

Committee for Establishing Premiums—The Chairman of the Committee on Fruits, do. on Plants and Flowers, do. on Trees, Shrubs and Entomology, do. on Vegetables, Willard Nye, and George Tappan.

Library Committee—Joseph C. Delano, Geo. Howland, jr., Samuel R. Brown.

Committee on Fruits—H. H. Crapo, Wm. Swift, Wm. T. Cook, Jos. Clark, Rodolphus N. Swift.

Committee on Plants and Flowers—Thomas A. Greene, William C. Coffin, Wellwood Young, F. P. Chase, I. D. Hall.

Committee on Shrubs and Entomology—Augustus Taber, Obed Nye, Hattil Kelley, Wellwood Young, John B. Burgess.

Committee on Vegetables—Edmund Gardner, John B. Burgess, H. S. Packard, John M. Howland, Philip Anthony.

Committee on Publications—James B. Congdon, Rec. Sec'y, and the Chairman of the respective Committees on Fruits, Plants and Flowers, on Trees, Shrubs and Entomology, and on Vegetables.

Committee on Exchanges—Albert D. Hatch.

RURAL GOTHIC CHURCH.

Hort: May, 1851.

THE

Horticulturist,

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

The Neglected American Plants.

IT is an old and familiar saying that a prophet is not without honor, except in his own country, and as we were making our way this spring through a dense forest in the state of New-Jersey, we were tempted to apply this saying to things as well as people. How many grand and stately trees there are in our woodlands, that are never heeded by the arboriculturist in planting his lawns and pleasure-grounds; how many rich and beautiful shrubs, that might embellish our walks and add variety to our shrubberies, that are left to wave on the mountain crag, or overhang the steep side of some forest valley; how many rare and curious flowers that bloom unseen amid the depths of silent woods, or along the margin of wild water-courses. Yes, our hot-houses are full of the heaths of New-Holland and the Cape, our parterres are gay with the Verbenas and Fuchsias of South America, our pleasure-grounds are studded with the trees of Europe and Northern Asia, while the rarest spectacle in an American country place, is to see above three or four native trees, rarer still to find any but foreign shrubs, and rarest of all, to find any of our native wild flowers.

Nothing strikes foreign horticulturists and amateurs so much, as this apathy and indifference of Americans, to the beautiful sylvan and floral products of their own country. An enthusiastic collector in Belgium first made us keenly sensible of this condition of our countrymen, but Summer, in describing the difficulty he had in procuring from any of his correspondents, here, American seeds or plants—even of well known and tolerably abundant species, by telling us that amateurs and nurserymen who annually import from him every new and rare exotic that the richest collections of Europe possessed, could scarcely be prevailed upon to make a search for native American plants, far more beautiful, which grow in the woods not ten miles from their own doors. Some of them were wholly ignorant of such plants, except so far as a familiarity with their names in the books may be called an acquaintance. Others knew

them, but considered them "wild plants," and therefore, too little deserving of attention to be worth the trouble of collecting, even for curious foreigners. "And so," he continued, in a country of Azaleas, Kalmias, Rhododendrons, Cypripediums, Magnolias and Nysas,—the loveliest flowers, shrubs, and trees of temperate climates,—you never put them in your gardens, but send over the water every year for thousands of dollars worth of English larches and Dutch hyacinths. *Voila le gout Republique!*"

In truth, we felt that we quite deserved the sweeping sarcasm of our Belgian friend. We had always, indeed, excused ourselves for the well known neglect of the riches of our native Flora, by saying that what we can see any day in the woods, is not the thing by which to make a garden distinguished—and that since all mankind have a passion for novelty, where, as in a fine foreign tree or shrub, both beauty and novelty are combined, so much the greater is the pleasure experienced. But, indeed, one has only to go to England, where "American plants" are the fashion, (not undeservedly, too,) to learn that he knows very little about the beauty of American plants. The difference between a grand Oak or Magnolia, or Tulip tree, grown with all its graceful and majestic development of head, in a park where it has nothing to interfere with its expansion but sky and air, and the same tree shut up in a forest, a quarter of a mile high, with only a tall gigantic mast of a stem, and a tuft of foliage at the top, is the difference between the best bred and highly cultivated man of the day, and the best buffalo hunter of the Rocky Mountains, with his sinewy body tattooed and tanned till you scarcely know what is the natural color of the skin. A person accustomed to the wild Indian only, might think he knew perfectly well what a man is—and so indeed, he does, if you mean a red man. But the "civilizee" is not more different from the aboriginal man of the forest, than the cultivated and perfect garden tree or shrub, (granting always that it *takes* to civilization—which some trees, like Indians, do not,) than a tree of the pleasure grounds differs from a tree of the woods.

Perhaps the finest revelation of this sort in England, is the clumps and masses of our Mountain Laurel, *Kalmia latifolia*, and our Azaleas and Rhododendrons, which embellish the English pleasure-grounds. In some of the great country seats, whole acres of lawn, kept like velvet, are made the ground-work upon which these masses of the richest foliaged and the gayest flowering shrubs are embroidered. Each mass is planted in a round or oval bed of deep, rich, sandy mould, in which it attains a luxuriance and perfection of form and foliage, almost as new to an American as to a Sandwich Islander. The Germans make avenues of our Tulip trees, and in the South of France, one finds more planted Magnolias in the gardens, than there are, out of the woods, in all the United States. It is thus, by seeing them away from home, where their merits are better appreciated, and more highly developed, that one learns for the first time what our gardens have lost, by our having none of these "American plants" in them.

The subject is one which should be pursued to much greater length than we are able to follow it in the present article. Our woods and swamps are full of the most exquisite plants, some of which would greatly embellish even the smallest garden. But it is rather to one single feature in the pleasure grounds, that we would at this moment direct the attention, and that is, the introduction of two broad-leaved evergreen shrubs,

that are abundant in every part of the middle states, and that are, nevertheless, seldom to be seen in any of our gardens or nurseries, from one end of the country to the other. The defect is the more to be deplored, because our ornamental plantations, so far as they are evergreen, consist almost entirely of pines and firs—all narrow-leaved evergreens—far inferior in richness of foliage, to those we have mentioned.

The *Native Holly* grows from Long-Island to Florida, and is quite abundant in the woods of New-Jersey, Maryland and Virginia. It forms a shrub or small tree, varying from four to forty feet in height—clothed with foliage and berries of the same ornamental character as the European Holly—except that the leaf is a shade lighter in its green. The plant too, is perfectly hardy, even in the climate of Boston—while the European Holly is quite too tender for open air culture in the middle states—notwithstanding that peaches ripen here in orchards, and in England only on walls.

The *American Laurel* or Kalmia, is too well known in all parts of the country to need any description. And what new shrub, we would ask, is there--whether from the Himmalayas or the Andes, whether hardy or tender, which surpasses the American Laurel when in perfection—as to the richness of its dark green foliage, or the exquisite delicacy and beauty of its gay masses of flowers? If it came from the highlands of Chili, and were recently introduced, it would bring a guinea a plant, and no grumbling!

Granting all this, let our readers who wish to decorate their grounds with something *new and beautiful*, undertake now, *in this month of May*, (for these plants are best transplanted *after* they have commenced a new growth,) to plant some laurels and hollies. If they would do this quite successfully, they must not stick them here and there among other shrubs in the common border—but prepare a bed or clump, in some cool, rather shaded aspect—a north slope is better than a southern one—where the subsoil is rather damp than dry. The soil should be sandy or gravelly, with a mixture of black earth well decomposed, or a cart-load or two of rotten leaves from an old wood, and it should be at least 18 or 20 inches deep, to retain the moisture in a long drouth. A bed of these fine evergreens, made in this way, will be a *feature* in the grounds, which, after it has been well established for a few years, will convince you far better than any words of ours, of the neglected beauty of our American plants.

OSAGE ORANGE FOR HEDGES.

BY B. HODGE, BUFFALO, N. Y.

A. J. Downing, Esq.—Dear Sir: During the past few years I have had very many inquiries relative to the Osage Orange as a hedge plant—whether it would endure the severity of hard winters, &c. For the purpose of enabling me to answer these inquiries understandingly, two years ago I procured and planted a quantity of the seed. The first season, (1849,) they made a growth of nearly two feet—and when the cold frosts of au-

tumn came, the wood was but imperfectly ripened. I left them entirely unprotected, and in the spring the whole of the tops were completely killed, quite down to the ground. The roots, however, all survived, and during the year 1850 they made a fine growth, having thrown up numerous shoots from three to four feet high. I have examined them to-day, and find that the ends of all the branches are killed from one to two feet. We have had a few very cold days during the past winter—yet, on the whole, a rather mild winter than otherwise. Again, there was considerable snow on the ground during the most severe weather, and this no doubt protected the trees. From my little experience, and from observation, I am quite of the opinion, that the Osage Orange cannot be relied on for a hedge in a northern latitude. Will others who have had more experience, give us their opinion?

In conclusion, I would just remark, that in the vicinity of Cincinnati, the Osage Orange succeeds admirably. Such beautiful hedges as I saw there last autumn, are rare indeed, in this country. I fear, however, that for New-York, New-England, Wisconsin, Northern Illinois, &c., it will not answer. Yours very truly, B. HODGE.

Buffalo, March 14, 1851.

REMARKS.—We believe we have already given our opinion that the Osage Orange will make a good hedge no farther north than the peach ripens well. But we have no doubt it will answer at Buffalo. It is found by experience, that as soon as the hedge is sheared, and the growth becomes short and well matured, it is far hardier than when the plants are young. ED.

SOME REMARKS ON VEGETABLE PHYSIOLOGY.

BY P. BARRY, ROCHESTER, N. Y.

In what way are new layers of wood added to the stems of growing exogenous trees?

This is a mooted question among vegetable physiologists, and as the subject has been brought forcibly to my mind, by an example which I have met in pruning, I thought it might not be unprofitable to draw attention to this very interesting subject.

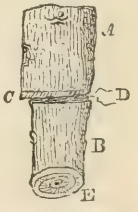
The popular theory, I believe, is that the moisture of the soil enters the roots of plants, through the spongioles or porous points, by absorption—that there it combines with soluble matters already in the roots and stem, and becomes what is called *sap*—that this ascends through the cells or organs of the stem, into the leaves, where, by parting with water by exhalation, and receiving carbonic acid gas from the atmosphere by absorption, it undergoes certain changes, becomes duly elaborated and fitted for the formation of new parts, when it takes the name of *cambium*. Then this cambium or elaborated sap, passes downwards, through the inner bark, and deposites a new layer of wood on the top of the previous one, and a new layer of bark *within* the previous one,—and thus what we call the concentric layers or annual rings of wood, by which we count the ages of trees, are formed.

This, as I have remarked, is the most popular theory, at least so I regard it, of the formation of exogenous wood. But there are some learened physiologists and botanists who dissent from this theory.

Dr. SCHLEIDEN, extraordinary professor of Botany in the University of Jena, in his "*Principles* of Scientific Botany," a learned and valuable work, says, "this is only a dream picture." "In the first place," says he, "there is no such thing as crude sap. It cannot therefore be carried to the leaves to become assimilated. From whatever part,

and at whatever time, we examine the sap of a plant, we find that it contains organic principles which cannot come from the soil, because they do not exist there; such as starch; sugar, gum, malic, citric and tartaric acids, albumen, &c. These substances are diluted with a good deal of water, and mixed with a little carbonic acid and carbonate of ammonia which are contained in the water of the soil. Even in the cells of the roots which first receive the moisture of the soil, it is chemically changed, assimilated, and the sap is most decidedly not flowing in special vessels but passing upwards from cell to cell, and thus it is in every new cell which is being developed by the formative chemical processes. *Nothing remains for the leaves to assimilate.*"

This you see is an utter denial of the ascent of the sap in special vessels, of its elaboration in the leaves, or descent in the bark. Now if he be right, how is it possible, that, when the ascent of the sap is obstructed by the compression of the stem as with a ligature the upper part, which is less in contact with the sap than the lower part, can increase much more rapidly in size? The example to which I have referred is that of the branch of a plum tree encircled by the wire of a label. This branch is four years old, and during the whole of last season and part of the one previous, this wire has been so tight that no enlargement of the wood under it could take place, the consequence is that the part just above the wire is one inch greater in circumference than that below it, so much greater have been the deposites of new matter above than below. Besides it happened that on one side the wire did not press so firmly, nor so soon as on the other, and on that side of the part below the wire, we find the last layer of wood *three times as thick* as on the other side, where the pressure was first and greatest, and the separation more complete.



The annexed drawing represents the branch referred to, A the large portion above the wire, and B the smaller portion below. C, D, the point encircled by the wire. On the side D, the wire admitted of greater expansion, and there the upper and lower lip of the wound project almost equally. On the side C, the upper lip is a regular perpendicular wall 3-16 of an inch deep, the surface of the lower part being quite even. On the cut section E, we find the last ring of wood on the side A, D, B, 3 times as large as on the other, on account of the partial communication existing at the point D.

Does not this furnish a pretty strong indication that the formation of new layers of wood, is a downward process, and that it depends upon the leaves.

Dr. SCHLEIDEN accounts for such cases by saying, "As water is continually exhaled by plants in proportion to the motion, dryness and warmth of the air, so the sap becomes concentrated, and thus interrupts the endosmotic process towards the other cells; this action is continued naturally downwards towards the roots, by which new watery and unassimilated fluids are absorbed. If this stream of crude sap* is artificially interrupted in its course from below upwards, the sap in the upper part becomes more concentrated, and its organizing power increased. This is the simple fact which lies at the foundation of all the phenomena which are brought forward to support the groundless hypothesis of a descending bark sap. The two most important facts upon this subject are: 1. The magic ring (ringing fruit trees.) 2. The action of grafts.

"If from the circumference of a branch or tree, a ring of bark be removed, the upper part will bear richer blossoms and fruit; the latter will ripen quicker, the leaves will be thrown off sooner, and the trunk will become thicker and stronger than in the part below the cutting. All this is completely explained in the foregoing facts, without making it in

* In a previous quotation the existence of a "crude sap" is denied.

the least degree necessary to assume the motion of any descending proper juice or bark sap which certainly does not exist."

"When an apricot graft grows from the trunk of a plum tree, the latter is naturally and by degrees clothed with apricot wood, for out of the same soil, an apricot tree would merely take up the same sap as the plum tree; but afterwards, in proportion as the leaves and branches of the plum tree, or of the apricot, evaporate, assimilate, &c., plum or apricot wood will remain." Such is Dr. Schleiden's mode of reasoning, and really the case of the graft presents at first sight the strongest objection to the descending sap theory, because if the new woody matter is prepared in the leaves and is deposited by a downward process, is it not reasonable to suppose that when the pear grows on a quince stock, new layers of pear wood will be deposited on the quince? But no such phenomenon occurs, and as I believe for this reason. The cambium or elaborated sap, is only a prepared condition of the food of trees, and when it happens, as in the case of the pear on the quince, that one species prepares cambium for itself and another, each one receives it as *food only* and appropriates it to its own peculiar formation in the way that two species of plants will grow in precisely the same soil without losing their identity, or two species of animals subsist on the same food without assuming any degree of similarity. I do not doubt, nor is it denied, that I am aware of, by any physiologists that the sap undergoes a certain degree of elaboration in the cells and organs of the stem, but that it is *principally* performed by the leaves, and that the principal part of the new wood is formed by the descending prepared sap, seems most in harmony with the facts that daily occur to us in practice.

P. B.

Rochester, N. Y., April, 1851.

Remarks.—A highly interesting communication. Dr. Schleiden, in some of his works, reasons so poorly that we have little faith in him. Experiments, which may be repeated by any one, prove the passage of the fluids downward, after having risen to the leaves, and been exposed to a distinct process there. The assimilation or digestion is however not completed in the leaf, but depends for that final individuality of character which causes it to make plum or pear tree wood, upon the *bark* which immediately overlays such wood —for the downward current usually passes through the bark, and is thence distributed horizontally through the medullary rays into the interior of the stem. Hence, whatever the bark is which covers any part of the stem of a tree, such will be the kind of wood deposited beneath that bark—no matter whether the leaves above that bark be pear or quince.

This is not only proved by the familiar fact, that the barks above and below the graft, always maintain their original line of distinction, but more clearly by the experiment made by phiysiologists of grafting rings of the bark of various allied species, as the pear, quince and apple, upon different parts of the same trunk. After growing several years it was found that the pear bark had deposited pear wood—the quince bark, quince wood, and so of the others. There were no leaves to each ring of bark, and the experiment clearly proved that the action of the wood depends on the bark which overlays it, and gives its final character to the downward currant of fluid nutriment just as it undergoes its last change into solid matter. Ed.

A SEASON'S RAMBLE AMONG WILD FLOWERS.

BY T. S. GOLD, CONNECTICUT.

The dissolving snows of winter remind us of the pleasures of spring, and as the frosts relax their hold upon the soil, the ever teeming earth is ready to put forth a thousand forms of life and beauty. My object at the present time, is to refresh our minds that are familiar with these beauties, not by a full description of them, but by adverting to some of their striking characters; also to awaken the attention of those who have hitherto walked the fields unmindful of a greater display of glory around them, than that with which Solomon was arrayed.

To the true lover of flowers and of nature, (and I cannot separate the two,) a wide field of enjoyment is presented, into which many never enter. I can feel no sympathy with him who ruthlessly destroys, or carelessly treads upon these gems which God has strewn so bountifully about our paths, evidently with a design to cherish our finer feelings, and soften our hearts. As they were created for our happiness and improvement, we should gather them, (but not rudely,) study the marks of design and goodness they exhibit, and present them to our friends as tokens of that peace and purity which alone pertains to the productions of the Divine hand.

The list which I propose to give of these gems of nature, will be by no means complete, but contain many found in this locality, Litchfield county, Ct. They are nearly all perennials, and most of them might be established with a little care, in some undisturbed position near the dwelling. How much would it add to the charms of a country residence to form upon that rocky knoll hard by, a collection of wild plants suited to it, or beneath the shades of some neighboring copse, or upon the borders of that little rivulet, to assemble from distant wood and glen their floral treasures, allowing each to retain their peculiar habits, of which many are very tenacious. Once established, very little care would be necessary to preserve them, and thus, through the season, a succession might be maintained of these modest, fairy-like gifts, almost in their native haunts, and another rose be added to the wreath of rural pleasures.

For every flower which I shall name, I have a strong affection; its native locality, where I have often found it, is fresh in my mind, and at the sight of it my heart thrills with delight, as when I meet an old and long tried friend.

And now, friends, let us take a long ramble in the fields and woods, beginning as soon as the blue-bird commences its happy carol, and continuing it till the chilly blasts of autumn warn us to seek again our warm firesides, there to meditate upon the many bright images with which we have stored our minds.

First, let us visit that bleak northern hill-side, for there the

Epigæa repens, (Trailing Arbutus,) as I saw before the snows were gone, had prepared its buds to open with the first genial breath of spring. Here it is, an evergreen vine, or trailing shrub, half covered with the dry leaves; but its little pink clusters are open, exhaling a fragrance equaling that of more favored flowers.

Let us pass that skirt of woodland, and under its sunny side, peeping from beneath the dry leaves, we will find the

Hepatica acutiloba and *americana*, (Liverleaf.)—These species resemble each other in their spotted lobed leaves, and in their numerous delicate blue and white flowers, and they offer us a welcome salutation to enjoy the beauties of spring.

You must follow me without particular invitation, as we visit, during the advance of the season, the various haunts of flowers, for nature's garden is extensive, and so delicate are many of her productions, that they can only thrive in the soil and aspect particularly adapted to each; yet is no spot so barren, but that at the proper time it yields its jewels. As we descend these broad rocks, wherever a niche occurs in which there is an inch of soil, we may find the

Saxifraga virginiensis, (Rock Saxifrage,) not waiting to grow more than one inch in height, lest the kindly showers of spring fail, it opens its little white flowers until the whole rock is carpeted with them. Where the soil is deeper, it grows upwards of a foot in height.

In yonder sheltered vale, half shaded and half sunny, undisturbed by the hand of man, we may find many flowers.

Anemone nemorosa and *thalictroides*, (Wood Anemone.) Fit tenants of this favored spot; the first rude blast will strip them of their delicate white or pale lilac petals, and crush their airy foliage; they are welcome to our boquets.

Claytonia virginica, (Spring Beauty.) The frailness and delicate beauty of this plant, render it worthy of its name. It is found under the protection of some large rock, or decaying stump, opening its pretty pink petals, striped with red, to the gladdening sun.

Arum triphyllum, (Wild Turnep, or Indian Turnep, Jack in the Pulpit.) The curious form, rather than the beauty of this plant, attracts us. Its spathe, striped with purple and green, bending over like a friar's hood, to cover its cup, which is succeeded by a bunch of brilliant scarlet berries, always affords a theme for admiration.

Azarum canadense, (Wild Ginger.) Beneath that decayed log, thrusting aside the fallen leaves, some large and broad kidney-shaped leaves, attached to a kind of subterranean stem, appear, and close in at their base may be found a small purplish flower. The pleasing fragrance of its stem and root, are the chief merits of this plant.

Dentaria diphylla, (Pepper Root.) Along the dry banks of the stream, this may be found producing a spike of white flowers. Its root is large, white, and pungent.

Erythronium americanum, (Dog-tooth Violet.) Another of the welcome harbingers of spring. Very early, its long spotted leaf shoots up in some sheltered spot, succeeded by its flower stalk, bearing a single yellow, lilly-like flower.

Uvularia perfoliata and *sessilifolia*, (Bell Wort.) These are graceful plants, about one foot high, resembling the preceding in their flowers, and the same damp, rich soil produces them.

Sanguinaria canadensis, (Blood Root.) This is one of the earliest flowers. We shall find it in some sunny moist spot in the meadow, under the shelter of a rock, opening its large, pure white petals to the sun, disclosing the yellow stamens within. The blood-red juice which exudes from the stem, as well as the root, when bruised, gives rise to its name. The leaf is like the foliage of the grape-vine.

Caltha palustris, (Water-Cowslips.) Marking the course of the stream as it winds along through the meadow, this plant appears with its gay and yellow fllowers, too well known to need description.

Actæa rubra and *alba*, (Necklace Weed.) Before leaving the deep rich soil of the vale, we may find these plants, with clusters of small white flowers; but they are better known when in fruit, the former producing bunches of deep scarlet berries the latter white oval waxen ones, with black spots on their extremities, which, upon their large red peduncles, present a very striking appearance.

Mitella diphylla, (Currant Leaf.) The same fruitful soil has still other treasures for us.

This plant produces a single spike of small white flowers, nearly one foot in height. It exhibits the same tenderness which belongs to most of the flowers of this period. It accompanies the following species, which it much resembles, in the borders of moist woods.

Tiarella cordifolia, (Mitre Wort.) Two opposite leaves upon the flower stalk is the most prominent distinction between this and the preceding.

As we leave the vale already loaded, but not burdened, with our collection, we will direct our course through the open woods, towards yonder rocky and half exposed ledges. We may find on our way the little starry white blossoms of the

Trientalis americana, (Chick Wintergreen,) surrounded by long, narrow pointed leaves, on a slender stalk, about six inches in height. This is one of those pure and spotless things which remind us, that notwithstanding human imperfections, there is a being whose works are perfect.

Aquilegia canadensis, (Columbine.) Having reached the ledge, we find this plant, far surpassing in the delicacy of its foliage and flowers, the cultivated varieties. The sweetness of its pendant red and yellow blossoms, graceful form and luxuriance, always render it a favorite.

Aronia botryapium, (Shad-bush—June Berry.) Growing from the clefts of the same rock, is this shrub or small tree; and even before any foliage appears, it is covered with its snow-white blossoms.

Xylosteum ciliatum, (Fly Honeysuckle.) Sheltered in this thicket we may find this plant; a shrub about five feet high, covered with small yellowish-red flowers, growing in pairs, and very sweet. The bees soon find their way to these delicacies; and what is more cheering on a bright day in spring, than a bush in full leaf and flower, covered with the busy bees, while all around is still, dry and barren.

Trillium erectum, (Wake Robin.) As we descend from the rocky knoll, among the thick shrubs and in a damp soil, is found the wake robin. Its stalk is about one foot in in height, where it sends out three rhomboidal leaves, and is terminated above by one flower with three petals; these are either purple or white, with purple centres. Were it not for its unpleasant odor, this would be one of the favorite flowers of the woods.

Viola, (Wild Violets.) During our rambles we have not failed to gather blue, white and yellow violets; although they are not distinguished for beauty, yet as heralds of summer they are ever welcome. Some of them are sweet scented, (though usually they have no fragrance,) and no bunch of spring flowers is perfect without them. Two years since, I found in a meadow a bunch of violets, which from their rare size and beauty, I removed to the garden. They are blue, striped with white, and upon a little turf of six inches in diameter, there were about fifty flowers.

Polygala pancifolia, (Flowering Wintergreen.) In the border of these pine woods we find this delicate red flower. The plant is about the size of the common wintergreen, yet it produces one or two flowers of rare beauty; often hundreds of them may be found where the fallen pine leaves have checked every other species of vegetation.

Houstonia cerulea, (Venus Pride, Innocence, Bluett, Forget-me-not.) As we emerge into the open field, we still find our path strewed with flowers. This humble and modest little plant, is too well known to need any description; yet abundant as it is, who can tread roughly on the turf which it makes like a soft enameled carpet.

Azalea, (Wild Honeysuckle, May Apple.) Now let us plunge into the deep woods, and where the hand of man has never violated its retreat, we shall find this sweet flower. What lover of nature ever returned from a ramble in our forests in smiling May, without bending his steps to some sequestered spot where he may gather a bunch of these blossoms,

which always attract by their rich color and delicate fragrance. Many species are common, varying in color, but in other respects similar.

Orchis spectabilis, (Gay Orchis.) In woods a little later we may find this species, one of the most delicate of the family, producing spikes of pink flowers about six inches high.

Cypripedium, (Moccasin Flower.) In the same soil, some in the deep forest, and some in its borders, are found the different species of this most beautiful genus. The rich shades of their colors, and delicacy of their markings, are only equaled by their graceful and curious forms, and the most careless rambler would stop to admire them. Yet few plants are as tenacious of their own rights to a congenial soil, and so difficult of cultivation. The *spectabile* is the only species which is found in open grounds, and from its rugged appearance, gives some hope that it may succeed in the garden.

Convallaria, (Solomon's Seal.) We shall find several species of this genus at this season, but none of them equal the one cultivated, (Lily of the Valley,) which belongs to the south.

These may form our boquet of spring flowers; no less beautiful will be those of summer.

Sisyrinchium anceps, (Blue-eyed Grass.) As we wander in the low grassy meadows, this little blue-eye looks up at us on its grass-like stem, and seeks our notice.

Corydalis glauca. We must again turn to the woods, and in their rocky border we may find this delicate biennial; whose singular foliage, of a bluish tinge, and long succession of small yellow and pink flowers, should render it an especial favorite. This and the following species, are much improved by cultivation, both in the size and number of their flowers.

C. fungosa. The deepest and wildest recesses of the forest must be searched for this species. It is a delicate vine, and there I have seen it spreading over the rocks in the greatest profusion. Its airy foliage and curious flower, is similar to the preceding. Another species still, is found in similar localities.

Sarracenia purpurea, (Side-saddle Flower, Pitcher plant.) In our search for summer flowers, we must not neglect to visit yonder peat bog, for cold and forbidding as it looks, some of its productions exceed the bounds of the most erratic fancy. The purple flower of the pitcher plant, with the termination of its pistil expanded so as to cover nearly the whole flower, excites our admiration, but not equally with its cup-shaped leaves; these are rigid, upright, shaped like a sack contracted towards the top, and often holding a gill of water. Here we see a provision made by Providence for maintaining a supply of this necessary element, in addition to that which the roots may obtain.

Calopogon pulchellum, (Grass Pink.) We must not leave the swamp until we have discovered other treasures. The grass pink has a slender stalk of a foot or more in height, and near the top several large purple flowers, which possess the curious forms belonging to the Orchis family.

Pogonia ophioglossoides, (Snake-mouth Arethusa.) Belonging to the same tribe, and standing at its side, we find the arethusa. It has a single purple flower, at the top of a stem rarely one foot in height. Language fails to give any idea of the curious forms this family exhibit.

Pontederia cordata, (Pickerel Weed.) Before leaving the marsh we must visit this little lake, for the bright sun has warmed it, and emerging from its shallow borders are seen the pale blue spikes of the pickerel weed, rising about two feet in height.

Calla palustris, (Water Arum.) This plant, though much inferior to the exotic species, is not devoid of beauty. It is found in sluggish streams, or shallow lakes, with the

Nymphea odorata, (White Water Lily.) Fit dwellings for the undines or water nymphs; we see their large white corols expanded, pure and spotless, on the surface of the deeper water, while their broad glossy leaves extend around them. Their sweet perfume equals their beauty. Having gathered these, shall we not say that we have been richly paid for our visit to this otherwise unattractive spot.

Geranium maculatum, (Crowfoot Geranium, Cranesbill.) We must make another visit to the low meadow and sheltered rivulet, for here now the cranesbill expands its delicate purple petals. This is not inferior to some of the cultivated species, and as it grows in the greatest profusion, the effect it produces is very pleasing.

Lysimachia stricta, (Loose Strife.) There are many species of this genus, of which this is the finest. They grow on the borders of streams, and produce an abundance of small yellow, star-like flowers.

Iris versicolor and *prismatica*, (Blue Flag, Boston Iris.) In the same locality we may find these two species of iris, resembling those cultivated; but the latter one, especially, is more slender and delicate.

Chimaphila maculata, (Spotted Wintergreen.)

Chimaphila umbellata, (Prince's Pine.) The burning sun inclines us to visit the deep shades of the forest, and there we shall still find new charms. These two species are evergreens, and produce clusters of small reddish white, fragrant waxen flowers.

Pyrola rotundifolia and *elliptica*, (Pear Leaf Wintergreen.) The habits of these plants are similar to the preceding, as also their flowers, except they grow on slender spikes.

Mitchella repens, (Partridge Berry.) Where there is some partial opening in the forest, we may find this small evergreen vine, with its dark pink flowers, in pairs, bearing at the same time the red waxen berries of the previous year. Its thick carpet of green is attractive, but its most pleasing feature is its delicate fragrance.

Monotropa uniflora, (Indian Pipe, Wax Plant.) Enter again the deep forest, and we are startled at something which at first sight presents more the appearance of a work of art, than a production of nature. The wax plant, with no green leaves, but the whole stem, as well as flower, of a frosty whiteness, makes us doubt whether it is natural or artificial. An examination of its delicate and perfect corol settles this point. Later in the season the flower turns brown, and from a nodding position becomes upright. It is said to be parasitic on the roots of trees, and is one of nature's greatest curiosities.

Linnæa borealis, (Twin Flower.) This is the only species in our country of this genus, named in honor of the immortal LINNEUS. It is a slender, prostrate vine, found in dry woods, and usually excludes everything else from the space it occupies. Its stalks, each bearing a pair of small pink, sweet scented flowers, rise about four inches. I have seen it but in two localities, and its beauty, and the associations connected with its name, have induced me to make a pilgrimage of many miles to visit it.

Cassia chamæcrista and *nictitans*, (Wild Sensitive Plant.) Leaving the forest, let us now search that arid sandy plain, for since our visit in spring, its vegetation has entirely changed. We shall now find these two species of Cassia, which are very similar, except the flowers of the first are much the largest. They are bright yellow, with dark centres, produced abundantly on their slender branching stems, which grow about one foot high. As the delicate feathery foliage of these little annuals, like the true sensitive plant, folds up at the approach of evening, or of a storm, or when they may be rudely handled or plucked, but more slowly, they are always attractive, even before the blossoms appear; for many years I have cultivated them with perfect ease and success.

Lupinus perennis, (Wild Lupine.) So abundant is this plant in the same localty, as to

be esteemed a weed, yet its numerous spikes of blue flowers render it attractive, and well worthy of notice.

Asclepias quadrifolia and *tuberosa*, (Swallow-Worts.) In that broken wood which borders this sandy plain, thrive these species of Asclepias. The first possesses delicacy of form, and is sweet-scented, but the latter, (the butterfiy-weed,) is very showy, with its large clusters of orange colored flowers.

Rosa rubiginosa, (Sweet Briar, Elegantine.) Other species of single wild roses are common, but the sweet briar is the most worthy. The charming fragrance which it exhales at "early morn or dewy eve," the soft and airy expression of its foliage, the unassuming beauty of its flowers, have always rendered it a favorite; and whether we find it adorning some humble cottage, or luxuriating in its native haunts, it ever appears appropriate and beautiful.

Cactus opuntia, (Prickly Pear.) Dry basaltic or trap rocks, are the natural habitat of this plant. I have seen it only at West Rock, New-Haven, Ct. The flower will not compare in beauty with the exotic species, yet the unique appearance of the plant well adapts it to deck some rocky peak.

Campanula rotundifolia, (Hair Bell.) In similar localities, but more generally distributed throughout the state, we may find the hair bell. The round radical leaves of this species give rise to its botanical, and the slender hair-like leaves of the stem, to its common name. Nothing can be more graceful than the delicate nodding blue bells of this plant, supported on their slender stalks, and as they wave over some sunny bank, or sheltered crevice, we can only admire and praise them. Another species, the *Amplexicaulis*, (Clasping Bell-flower,) exhibits the same beautiful blue, but its flowers are half concealed among the clasping leaves of its single upright stem.

Lilium philadelphicum, *canadense* and *superbum*, (Field and Wood Lilies.) Let us visit these low meadows once more, before the scythe strips them of their mantle, for there and in the adjoining hedge row, among the abundant productions of summer, we shall find much that is beautiful. These three species of lily are each superior to some of the cultivated ones. The first has one or two large, red spotted, upright flowers; the second, one or more nodding yellow, or orange ones, with dark spots; but the third is a noble pyramid of 10—20 bright orange flowers, with purple spots.

Habenaria fimbriata, (Fringed Orchis.) A little later than the lilies, appears in the same situation, this most beautiful species of the Orchis family. Its dense spike of curiously formed purple flowers, ever renders it interesting.

Leptandra virginica. In the borders of that hedge, now may be seen shooting up, the tall spikes of the Leptandra, covered with its pretty white flowers.

Rudbeckia vacciniata. Accompanying it, or among the wild vegetation on the banks of some stream, is found the Rudbeckia, its tall branching stalks, terminated by its large yellow petals, making a very showy appearance.

Cuscuta americana, (Dodder.) This is a slender, yellow, parasitic vine, twining about other plants, in damp, shady places. It has small white flowers, and being destitute of green herbage, its curious aspect arrests our attention.

Impatiens pallida and *fulva*, (Touch-me-not, Jewel Weed.) These species are more delicate than the garden balsams, and their flowers are less abundant. These annuals grow so plentifully in some rich, damp situations, where the soil may have been disturbed, as to be regarded as weeds.

Clematis virginica, (Virgin's Bower, Traveler's Joy.) This is a common climbing plant, beautiful when covered with its clusters of white blossoms, but very showy when

the seeds are formed, which, from their long feathery appendages, have given to this plant the peculiar name by which it is often known, of "*devil's head in the bushes.*"

Lobelia cardinalis and *siphilitica.* Few flowers of the garden or green-house equal in brilliancy the scarlet cardinal flower. This, and the latter species, which is blue, in August adorn the banks of our streams with their tall spikes of flowers, and attract the attention of the most careless observer.

Glycine apios, (Ground Nut.) This plant, which from the edible character of its root, has attracted considerable attention in France, is found in the same neighborhood. It is a vine often ten feet in length, with handsome pinnate leaves, and thick clusters of brick-red, papilionaceous flowers; their fragrance is peculiar, strongly resembling that of fine green tea. (It produces a large number of small oblong tubers, the largest about the size of a dove's egg, strung upon its roots four or five inches apart. As freezing does not injure them, they may be dug in autumn or spring; and at the latter season, the only time I have tried them, much resemble a mealy potato, to which they are superior in flavor. From a vine which has stood in my garden for many years, and covers a small trellis, I dig a few handfuls annually, as a curiosity, and the parent stock remains uninjured. Should it improve by cultivation, as the potato has done, it would rival that important plant, and perhaps may become a useful substitute for it.)

Helonias dioicia, (False Unicorn Root.) This plant grows in the open fields, in cold, lean soils. Its flowers are small and white, arranged on a single tall, noodding, white or nearly transparent stem.

Spiranthus tortilis and *gracilia,* (Lady's Tresses.) In the same soil, we shall find the upright, slender stems of these species, surrounded in spiral rows by their white waxen flowers. To beauty of appearance they add a delightful fragrance.

Euchroma coccinea, (Painted Cups.) The corol of this plant is very insignificant, but it is accompanied by a number of scarlet bracts, which give it a very gay appearance. It is found in dry, poor soils.

Epilobium spicatum, (Willow Herb.) A strong plant, often six feet high, with long spikes of purple flowers. It is usually found in rich lands, recently stripped of their growth of timber.

Œnothera biennis, (Tree Primrose.) This is a biennial, so abundant as sometimes to be considered a weed. It delights in cultivation, and continues for a long time to furnish abundantly, its large, lemon-yellow flowers. Many plants, at a particular hour or season, open their corols, but none is more regular or easily observed than this. Soon after sunset its petals expand, not slowly, but with a sudden jerk; so that as they open one after another, the whole plant appears to possess animal life, and where, but a few minutes before, the buds were scarcely seen among the leaves, now appear broad, expanded flowers.

Gerardia flava and *pedicularia,* (False Foxglove.) These plants are distinguished for handsome foliage, and large, lemon-yellow flowers, shaped like the foxglove of the gardens. They grow about two feet high, and prefer dry, open woods.

G. purpurea and *tenuifolia.* These are much smaller than the preceding; their flowers are purple, and they are found in cold, damp soils.

Solidago, (Golden Rod.) It will not be worth while to enumerate the different species of this genus, yet we will not pass it by in silence; for by the abundance of its rich yellow flowers, seen in every hedge row, it adds much to the beauties of summer and autumn.

Gnaphalum polycephalum and *margaritaceum,* (Life Everlasting.) These are also very common, but that does not detract from the honey-like fragrance of the first, or the beauty of the pure white and durable little roses of the latter.

Aster. This is so numerous a family, that during autumn scarcely any locality or soil is without its representative. Its colors are equally varied, exhibiting almost every color except yellow. As they are all very hardy, and bear cultivation well, many of them may worthily occupy some vacant corner, even in a small garden. They remain bright and beautiful, after frosts of considerable severity.

Gentiana crinita, (Fringed Gentian.) Nature seems not to have bestowed all her favors on spring or summer, but to have reserved this one of her most unique productions, for dull and sober autumn. The bright blue color of its petals, their delicately fringed edges, and the fairy-like twist of its buds, always render it one of our favorites. Other species of gentian are found with it, in cold, damp places, but they resemble it only in its rich blue color.

And now, kind friends, as we gather these last flowers of autumn, how changed are our emotions from those which we felt, as full of hope and joy we culled the first blossoms of spring. It is with a kind of melancholy satisfaction, that we prolong the pleasures of summer, by collecting these last delicate productions of nature, even while the rude blasts of autumn are sweeping by, and remind us of coming winter, in which all vegetation must sleep until its frosts are dispelled by the genial breath of spring, again to cheer us with their varied forms of life and beauty. How plainly typical of our final rest and journey hence to the spirit land, where, with new powers, we hope to spend a blest eternity in admiring and praising the perfect works of our Creator. T. S. Gold.

Cream Hill, Ct., March 3, 1851.

TO RESUSCITATE TREES LONG OUT OF GROUND.

BY B. DESPORTES, ANGERS, FRANCE.

Hon. A. J. Downing—Sir: Permit me, through your estimable journal to make known a fact of the utmost importance to your countrymen, who import trees from Europe. And this communication is the more valuable from not being mere theory, but the result of actual experience.

In the spring of 1850, M. Andre Leroy, nurserymen of Angers, in France, imported from an American nurseryman, a large number of fruit trees, evergreens, plants, &c. The season was rather too far advanced when the order was sent, and when the trees arrived at their destination, they appeared to have suffered so much from the length of their journey, and to be in such a dry condition, that if they had been offered for sale, not a single buyer could have been found for them. But the intelligent owner was not easily discouraged. He had them unpacked, and taken to the bank of a stream which runs through his grounds. There he had a wide ditch dug, in which he placed the pear trees, covering them eight or ten inches deep with sand, which extended even upwards among the branches and over the roots, so as to cover them completely. In this condition they remained fifteen days, and on examination he found they were doing very well; he was not able to plant them until six days later, being at the time much engaged with other business; when he drew them from the earth they were in full blossom, and the roots were covered with new white fibres, nearly an inch long. The ground they were planted in was trenched and enriched with stable manure. Fearing that the roots were too small and feeble to nourish such long branches at that advanced season, he thought it prudent to shorthen in the trees for six or eight inches. Only two of them were lost; and although

some of them did not advance much, all, nevertheless, seemed healthy and vigorous. Some of the sorts have made four feet of new growth.

There were two thousand young pear trees, which were also a little dry, but by burying them under-ground some time before planting them, we succeeded with the greater number, that is to say, four-fifths are living and doing well. The quinces and other fruit trees were buried not in sand, but in earth which was too moist, on account of the abundant rains of that season, so that we were less fortunate with them, as well as with some young plants of the Cedar of Lebanon. The Larches, Mahonias, Hollies, Norway spruces, Rhododendrons, Judas trees, Filberts, &c., all flourish well.

This method has been known to us for some time past, and we have already pointed it out on the first page of our catalogue; these facts now serve to corroborate its value.

We also made the experiment during the past winter, with seventy-two rose bushes that were left out of the ground during three months; we had them covered with nearly six inches of earth, for the space of eighteen or twenty days; we planted them afterwards in the midst of others, which had not been subjected to this test, and we lost only five out of the whole number. All the others grew and flourished as usual.

This method cannot be too much urged upon those persons who receive their trees in too dry a condition.

B. DESPORTES,

At Andre Leroy's Nursery, Angers, [France,] Feb. 5, 1851

Having made trial of the above method, we can vouch for its efficacy. We will add to it, that trees which are imported when not in a growing state, should never be packed in *wet* moss, (ignorant packers often put them up for a long voyage as if they were going 100 miles at home,) but always in *dry* moss. In the latter case, they never heat or start to grow—in the former, always. If they are over dry, they are easily recovered by *burying* them in earth, (*not too damp*) as our correspondent suggests. If they have been forced into vegetation by being enveloped in damp moss, they are often wholly, always half ruined. ED

GARDEN UTENSILS.

[FROM THE GARDENER'S MAGAZINE OF BOTANY.]

THE annexed engraving represents some Belgian novelties of the class of garden utensils, and may, perhaps, be suggestive of some improvements in the mode of watering plants. The figures and descriptions are taken from *La Belgique Horticole.*

At the Agricultural Institute of Hohenheim, a new method of watering plants and gardens was brought into notice, and which, in German, is called *Schnellgiesser;* in Flemish, *Schnelgieter;* and in French, *Arrasoir a la minute,* (all three terms signifying, literally, *quick waterer.*) Figure 1 shows this invention with the mode of applying it. It consists of a wooden tub, bound by hoops of iron, furnished at the top with iron handles, and in front with two stout leather straps, by which it is suspended from the back of the workman. At the bottom of the tub is a copper socket, to which a gutta-percha or India-rubber pipe is attached, and at that part of this pipe, which may be conveniently held by the hand, there is a small turn-cock, and beyond this a spout and rose, the latter having the holes below. The tub contains as much water as the workman can carry, and when it is empty it is not taken off his back, but filled at the pump by a second person. The turn-cock enables the operator to stop or discharge the water at pleasure. By this contrivance

a great saving of time and labor is effected. [Some adaptation of this idea might be useful.]

Figure 2 represents a new pot constructed to prevent worms from entering at the bottom. in some gardens, where the earth is rich, the earth-worms are very troublesome, especially when the ground is damp. In these localities the worms crawl into the pots by means of the hole at the bottom, and if they commit little injury in the open ground, they are not so harmless among the roots confined in a pot. In order to obviate the evil arising from their intrusion, the new form of pot represented at figure 2, has been invented by M. Ghyselin, potter at Brussels. The bottom is distinguished by having three feet, which are only prolongations of the pot. The bottom is thus raised above the ground, and the worms are thereby prevented from entering at the hole. This pot has also the advantage of facilitating the circulation of air, and preventing the stagnation of water. [Worms, however, do not always enter garden-pots through the drainage hole, but sometimes, especially in small pots, from the top. Against this the proposed form offers no safeguard. After all, the best plan is to take care on what foundation the pots are set.]

Among the useful horticultural contrivances, may be noticed the iron trellis, represented at figure, 3, which combines solidity, elegance and lightness, qualities never found together in wooden trellises. The iron trellis, too, preserves all the forms or shapes which are given to it, and one may thus train plants in all the varied styles which are otherwise inapplicable. The form which is used has a circular head, like a parasol, consisting of four wires, which are bent and sustained in their position by three circles or hoops, the undermost considerably stouter than the others. The stem is supported at the base by three prongs, which are made so as to admit of being fixed in the ground or in a pot. This form, when made from three to four feet high, produces a very good effect, when used to support such a plant as Calystegia pubescens, which looks remarkably well trained to this form of trellis. This same form may be used in training climbing roses, in pots or in the open ground; their branches being led over the arches so as to cover the whole, present a mass of flowers in the summer time.

CONDITION AND PROSPECTS OF GARDENERS IN THE U. STATES.

BY THOMAS MEEHAN, PHILADELPHIA.

I have often been struck, Mr. Editor, by the accuracy and truthfulness with which the predictions of the late J. C. LOUDON, with regard to the progress of horticulture in America, are daily becoming verified. In his time, he found that in "all the more difficult operations of the art, every man was his own gardener"—but he thought that "as a number of professional gardeners had of late emigrated from Britain, and horticultural societies were about to be established, the science of gardening would soon be disseminated every where." Mr. LOUDON was also of opinion that horticulture would never be carried on by individuals in America, to the grand and magnificent extent that it is in England; but that it would have a greater number of patrons, a wider field for its operations, and be a means of greater enjoyment to its inhabitants, than to those of any country on the globe. We have only to look at gardening then, and merely glance at it now, in order to be convinced of the justice of this view. Gardening is progressing, and gardeners are more prosperous; but both can be made more so by a little consideration.

A few days ago, one of our city papers, "*The Public Ledger*," in speaking of the commercial progress and prospects of Philadelphia, came down like a thunderbolt on a sect of philosophers which it calls "waiters on Providence," whose creed teaches that everything in this world must "bide its time," and that nothing can be forced beyond the destiny of nature. Now I do not believe that such a sect exists among gardeners, for we all know too well that unless we put our crops in the ground at the proper season, or our fires on our forcing houses, not the firmest faith in the "wait on Providence" doctrine, will aid us. We are all practically acquainted with the truth of Æsop's fable of Hercules and the Wagoner, and know how the weight of all our results must bear on our own shoulders. Notwithstanding all this, we depend too much on the course of events for the advancement of the interests of our profession.

I am one of those men, Mr. Editor, who are somewhat selfish. It was my misfortune to be taught by the village schoolmaster, that "number one was the first law of nature." I strive, and have ever strove, to advance the interests of gardeners and of gardening; but I do not, nor have I ever done so, from any mere feeling of philanthropy, but from a firm faith in the belief that, by furthering the interests of gardening, I am contributing to my own. It was doubtless the same consideration which prompted the English government to adopt ROWLAND HILL'S suggestion of penny postage on letters. It was not merely because it was contributing to the convenience and consequent happiness of its subjects, but because, by increasing the circle of its postal patrons, it was evidently increasing its own revenue. It is not an incumbent duty—at any rate it is not general for the followers of any profession, to inquire whether their profession is to the increase of the pleasures or happiness of mankind, or not,—but gardeners have the advantage of knowing, whenever that question does arise, "that the garden is the purest of all human pleasures," and that no profession under heaven affords such abundant material for looking from "nature up to nature's God." While, therefore, they aim at the increase of their patrons—while they strive by every means in their power, to diffuse a love of nature as displayed in gardening, and while, by their untiring endeavors, gardening is flourishing and prosperous, they have the advantage of knowing, in the language of LINDLEY, that they are contributing to "the augmentation of the luxuries and comforts, and the diminution of the

wants and miseries of mankind," at the same time that they are administering to the interests of themselves.

"Gardeners are badly paid"—"there is no profession of whose members so much and so varied duties are required, at so small a remuneration." These have now become proverbs. To be "paid like a gardener," has become parallel to be "shod like a shoemaker's wife." But how can this be remedied? Not by repining or complaining, but by constant and untiring endeavors to show that we are worth more than we get—by leaving nothing undone that may let those who employ us know that our profession is a difficult one, and requires much cost and labor to arrive at any perfection in—and by leaving no opportunity to pass by which may lead us to the intelligence of how we may still be more useful to those who employ us.

It has been remarked by a correspondent in the July number of this Journal, that "a dozen gardeners, who live with some of the first merchants in New-York city, do not receive more money than is paid their porters for the scientific purpose of nailing up a packing box." I have reason to believe that American employers are far more open to a sense of the justice of a fair remuneration to useful intelligence, than English gentlemen; and I would suggest the merchants in question are unacquainted with the labor and cost that it requires to make a first rate gardener; at any rate never have given it a thought. The gentlemen which Mr. QUINN alludes too, as giving fair wages to their gardeners, do know this fact, and hence arises the difference. I know a fine garden in Connecticut, that has some fine plant houses, in which some plants are grown that would not disgrace a Chiswick exhibition, and which has or had as clever a gardener as ever came to this country. This gardener was one of the "badly paid." Upon inquiring I found that none of the members of this family ever went into the garden or plant houses, from one month's end to another. Can we expect gentlemen to pay for what they take no interest in?—or even if they do happen to take an interest,—for what they do not understand?

As I write these lines, I am strongly reminded of a maxim I learned while connected with commercial gardening:—"He who can raise enough stock to supply a large and varied market, is a 'smart' man; but he who can *make* a market for his stock, and bring in its full value where no market already exists, is a 'smarter.'" In another sense, this should be the aim of gardeners. If they find that they do not receive that remuneration which their services are worth, and that a main cause of that is a want of interest by employers in their profession, together with a want of knowledge as to its pleasures, and the cost and labor which the gardener has had to put himself to, to make himself capable of administering those pleasures—then it must be apparent that the removal of these obstacles alone, must be his object. One great means of effecting this, is to promote the extension and usefulness of horticultural societies and publications. They demand the enthusiastic support of the gardener. I have met with some gardeners who denounce them. I remember well that when the *Gardener's Chronicle* was first started in England, the majority of gardeners in our district denounced it. It was asserted that employers already "knew enough," and that if "such things" were encouraged, "the gentry" would soon "know as much as themselves." A few gardeners, with more judgment, knew that the more intimately the "gentry" were acquainted with gardening, the more they would be acquainted with the worth of a gardener, and the more interest they were likely to take in its pursuits. The sequel showed the correctness of their judgment. For few men would now deny that the *Gardener's Chronicle* has done more in its establishment towards the present position of gardening in England, with regard to its patron-

age, than in the existence of any other circumstance, whatever. Where one patronised gardening before it started, ten did afterwards. Some evils, of course, attended the improvements; but every move in the course of progress, disturbs something settled.

Not only by means of horticultural societies and publications, ought a gardener to diffuse a knowledge of his profession, and its pleasures and profits, but by a thousand-and-one other means that will readily suggest themselves, according to the circumstances around him. I know a gardener who accidentally fell in with a military officer. This gardener was not one who thought it dangerous "to tell others for nothing, what it had cost him something to learn." The conversation turned upon grafting and budding. The gardener explained the whole process, and illustrated it by experiments. This gentleman was, of course, learned how to do without a man to bud roses or pear trees, which, I believe, he would never have thought of requiring; but if my memory serves me right, that gentlemen who had never owned a flower before, so pleased with the success of his experiments in budding, has been led to keep a garden, and employ a gardener.

Not only is it our interest to take every available means of spreading a knowledge of our profession, but it is also incumbent on us to study by what means to render that knowledge easy to be acquired by those who are willing to learn. With this view, I am proud to find LINDLEY and others, agitating for a reform in the names of plants. The fact is, that if botanists do not take this matter into their own hands, the people will for them. We have tried it already in Philadelphia, and a pretty mess! "Johnny Jump-up," Glory of the world, Elephant's Ear, Pig's Nose, Catsfoot and Lion's Tail, are specimens of the names some plants have got. One time, when a lady unacquainted with plants, yet anxious to learn, would ask me the name of some plant, I would feel ashamed to have to bring out such names as my Robalanus and my Robatindus,—Pleuroschis motypus, or Nowad Worskia; and I have rejoiced when I could get a Phalœnopsis into a "Moth Flower," or a Peristeria to the "Dove Plant." Every one knows how necessary it is that one universal science should have one universal language; but there can be no reason why the botanist who names his plant, should not also give it a common name. I so feel the necessity of this, that I cannot wait for them. In naming my plants, I put the English name on one side, and the botanical on the other. Where the plant has no English name, but is named after some individual, as in *Russelia*, for instance, I make the English "Russel Flower." I tried to translate many of them literally, but such names as Melastoma and Sterculia, frightened me, just as one would be who tried to get a French Catalogue of pears into English, when he met with such names as Pater Noster, La Cuisse Madame, or Ah Mon Dieu!

It seems to me, Mr. Editor, that the reform in the nomenclature of plants is a subject which does not concern the botanist, and one which he is not likely to meddle with. On the other hand, it is one which no one horticulturist is ever likely to try his hand at. The only chance that I see of an uniform standard of common and easy names ever being brought into use, is by a committee appointed by either the Pennsylvania or Massachusetts Horticultural Society, to ascertain and arrange the best common names the plants in the United States have obtained, and give names to those which have none. Nurserymen would adopt them, and their use would soon become general. Unless something of this kind is done, I fear all talk about reforms will end in *talk*. Such a reform is tenfold more necessary here than in England. The classes there who take an interest in flowers, have been familiar, from their infancy, with the classics, and a name in Latin or Greek, is the same to them as their own tongue. In this country, the wealthiest are those who by their commercial talents, and unwearied industry, have raised themselves to the positions they

occupy, and to the majority of whom HOMER, or HORACE, would be as intelligible as the language of SI-SAN, or SADI the Persian. It is only by associating the names of plants with some name we have heard before, that any of us can make much progress in the commencement of our career. I can only answer for myself, that I should never have learned *Anagallis*, but for connecting it with "hang the gallows," nor *Camellia* without "Amelia." At any rate, it is a subject which would well repay the attention of horticultural societies, as, were the names of plants in the common language, the knowledge, and consequently the love and cultivation of plants, would much increase.

These, and kindred subjects, are well worthy the attention of gardeners. They tend to the advancement of their profession,—as does every thing which tends to increase their already extensive intelligence. The success of a PAXTON—JOSEPH PAXTON, gardener—in beating in the field of competition, the whole host of British architects engaged in designing the building for the "Exhibition of the Industry of all Nations," does more towards raising gardeners and gardening to their proper position, than all the talk about low wages would do in a century. Let not American gardeners despair. Their profession is yet destined to be held in higher estimation here, than it ever has been in any nation in the world. The time will assuredly come, when every large city in the Union will vie with each other in the splendor and magnificence of their *public* gardens, as compared to which, the majority of gardens in England will be children's play grounds. THOMAS MEEHAN,

Gardener to A. M. Eastwick, Bartram Bot. Garden, Philadelphia.

RANDOM NOTES ON SOUTHERN HORTICULTURE.

BY SYLVANUS, NEW-ORLEANS.

I was taking a stroll the other morning among the old faishioned gardens of New-Orleans, which are just beginning to be inviting, after the gloomy and cheerless winter, when it occurred to me that a few random notes on the subject of what does or does not, grow in this region, might be acceptable to your columns. I plucked a Chromatella rose, such in size and color as would make your heart glow to look on, and sauntered home to fulfill my intention. It was near the first of March, and—do not feel envious—green peas were ready for the table; as I passed a coffee-house, the fragrant scent of fresh mint, as some dry citizen was imbibing a julep, floated invitingly into the street, and—restrain your feelings—a bowl of fresh strawberries, the very first of the season, had that morning been announced as having been deposited in the *sanctum* of some lucky editor. The next day "came a frost, a killing frost—pea blossoms wilted, strawberries soured, and mint-juleps gave way to hot toddies." But this lasted only a few days. The weather has cleared up; peach and plum trees are in full blossom, the forest has assumed its livery of green, and the whole air is fragrant with odours. Spring is here at last, but I do not find that the charms of nature are so highly appreciated here as in the colder north. At least, so much attention is not paid to horticulture as a science. The south is generally considered as the land of flowers, and nature has done her best to make it so, but as yet, in this quarter, at least, but little attention is paid to gardening, beyond laying out an acre or two on plantations, and in the suburbs of the city, in a few of the more common fruits and flowers that are indigenous to the soil, or have been long introduced. Yet along the coast of the Mississippi, for sixty miles above and below New-Orleans, might be grown all the most beautiful trees and shrubs of the tropics, with but slight, or even no protection whatever.

There are, however, some serious drawbacks to horticultural enjoyment in this vicinity. The coast, as it is here called, is nothing but a strip of land of about a mile in width, bounded on one side by the Mississippi, on the other by a densely wooded swamp, entered by few except runaway negroes, hunters, or very devoted lovers of nature. The land is very low, indeed perfectly flat, and always damp, for by digging a few feet, you can reach water that is brackish and unwholesome. The soil, though rich in the extreme, is unsuited to many kinds of trees, and the long continued heats to which it is exposed, render it highly unfavorable to others. Then, too, however beautiful and tasteful may be the shrubberies and gardens, they are at all times too damp for any long-continued out-door enjoyment. There are no rich green grass swards, for grass does not flourish in this climate, and if there were, you could not lie upon them. A little insect, called the "*bete rouge*," or red bug, would soon penetrate your skin, and make you the nest of its interesting family; the dampness would bring on your rheumatism; and instead of indulging in pleasant thoughts, your time would be taken up in dealing destruction to the myriads of musquitoes swarming in clouds around you, seeking an opportunity to get a taste of you.

Yet is the vegetable growth beautiful to look upon. Immense live oaks expand their arms over you, and shelter you from the sun. The orange, the pomegranate, and the lemon, invite you by the fragrance of their blossoms, and the lusciousness of their fruit. The Jessamine makes the air heavy with its oppressive odor, and a stranger would, in the earlier months of spring, reap much enjoyment from a visit, if he could be satisfied with flowers and fruits alone.

As you approach New-Orleans, descending the river, the view on either bank is quite attractive. You can scent the odor of the flowers. You can hear the notes of the mocking bird, and see hundreds of these merry bucks of the woods, flitting from tree to tree, as untiring as young kittens in their sports.

But the admiration you feel and express, is, I think, more the result of contrast with the dull and heavy wilderness through which you travel for several days before you reach what is called the coast. Though nature has done much to adorn the scene, art has done little or nothing. And your admiration, should you chance to stop at any of the numerous plantations, would cease. You would be astonished at the few varieties of trees and shrubs, and flowers, you would meet with, and surprised at the meagreness of what seemed so powerfully attractive in the approach. Notwithstanding all the praises bestowed upon the sunny south, in this part of it, at least, Landscape Gardening is half a century behind the age. I say this after many years acquaintance with the gardens of both town and country. Even with the wealthiest planters, those who count their slaves by hundreds and their acres by thousands, and have the incomes of the nobles of England, a garden seems a superfluity, except, indeed, a kitchen-garden, and even that is left to the care of some superannuated negro, who can no longer be made profitable in the field. The French Creoles are fond of gardening, but it is in a small way, and indeed, their fondness for it is more connected with the idea of profit than of pleasure. There are many families in New-Orleans, highly respectable, who make a handsome support from the products of their gardens, principally flowers, which here are always in demand, particularly when the city is filled with strangers, as is usual for about two-thirds of the year. But their flowers are usually of the most ordinary kind, and that require but little labor or care in the cultivation, such as roses, acacias, violets and camellias, which latter, however, generally bring from one to two dollars. I have known a single bush bring as high as ten dollars, on some extraordinary occasion, when scarce.

There is a public garden about six miles from the city. It is a common resort, particu-

larly on Sundays, when, as it is easily accessible by railroad, thousands flock to it to get a little fresh air and a nosegay. It is laid out in the English style, and is a pleasant place of retreat from the heat and stench of this dirtiest of all cities. It, however, possesses no horticultural or botanical attraction. The garden is a source of profit from its flowers, but I suspect more money is made from the sale of liquor in the hotel which is connected with it. It is owned by the railroad company, and is the only attraction at that terminus of the line.

But there are many quiet, snug little gardens and delicious retreats, scattered here and there, through the city and its suburbs, giving a little variety to the ungainly masses of brick and mortar that constitute our squares, for except in public buildings, New-Orleans possesses no architectural beauty. As the city becomes Americanised, more and more taste seems to be developed. The houses are built back from the street. Trees are planted. Shrubberies unfold their sweets, and an idea begins to prevail, that there are other pleasures besides the gathering of dollars, and filling the stomach with dainties from the market.

The markets here are poorly supplied with vegetables. Celery is brought from the west, as are cabbages; every boat that comes down in the fall being literally covered with the latter. Strawberries are very scarce, and very acid, as a general rule. I have, however, seen fine ones in the gardens upon the coast. They are just beginning to find out how to cultivate them. I was on a visit last year, to a plantation not far from the city, the proprietor of which took me out one fine morning to admire his strawberry beds, which were white with blossoms. He remarked that it was singular he never could raise any, though his plants seemed to bloom well, and had the greatest attention paid to them. He had tried to raise them for five years, and was about giving them up in despair. I examined his plants, and found they were nearly all males. I explained to him the distinction, which, though he had heard of, had never been pointed out to him before. It appears he had purchased his plants from some dishonest nurseryman in the west, who had taken advantage of his ignorance on the subject, and got rid of his barren plants at a high price. This year he will have a fair crop, as will many of his neighbors, who have heretofore been in the same predicament as himself. While on the subject of strawberries, I will correct an error of the great LINNÆUS, who has said that strawberries were good for the gout. A friend of mine tried the experiment, and literally "put his foot into it," for he was rewarded for his indulgence by a very sharp fit of that by no means pleasant disease.

Within the last year or two, I have seen very fine Cauliflowers in the market. The Artichoke, which, when properly cooked, is a delicious vegetable, is here a great favorite, and very common. Every garden, of course, contains a space devoted to Okra. Water-melons will grow here, but are very insipid, while the green fleshed Nutmeg Melon, is nowhere more delicious. Figs and Oranges are abundant, while the Pear, Cherry, and the Plum, (except the wild kinds,) do not thrive at all. Bannanas grow and bear readily in the open air, but in very cold seasons are apt to be killed to the roots, when it requires two years for them to bear again. They are, however, imported in profusion from Havana, with Oranges and Pineapples, and other tropical fruits. The Olive will stand the winter here, and bear well, and might be made a source of profit; but I have only seen it grown on one or two plantations, and then only as a curiosity.

As I have before stated, there is not much true horticultural taste here, or much knowledge of trees and shrubs, either in town or country. Perhaps one reason is, that there are no large nurseries, from which trees and shrubs may be seen and procured. There are several nurseries on a small scale, in the vicinity of the city, but they contain nothing but

the most common sorts of trees, flowers and shrubs, such only as meet with a ready sale; such as Peltisfurmus,[?] Magnolias, Arbor Vitæs, Cedars, Oleanders, Tallow trees, (introduced only within the last few years,) and any quantity of roses. The most beautiful tree I have yet seen in the south, is the Date Palm. It resists the cold weather, grows with remarkable rapidity, and yet is rarely planted, or to be found in the nurseries. The largest here, is one standing in an old stable yard, and receives no care or protection. It is supposed to have been planted by the Jesuits some sixty years since. It is from thirty to forty feet in height, and perhaps eighteen inches in diameter. I have seen it in flower, but of course, standing alone, without a male, it bears no fruit. There are one or two others in the city; one is now in sight from my window as I write. Though planted only about twenty years ago, it is thirty feet high, and ten inches in diameter.

The *Mespilus Japonica* has become quite a favorite tree here. The fruit is no addition to our stock, but the tree is beautiful, and withstands the cold even better than the Magnolias, native though they are. But after all, no tree is more deservedly a favorite than the *Magnolia grandiflora*. It is almost the only tree from the woods that is thought worthy of being transplanted into the shrubbery—a great mistake, by the way. In the city during winter, it is rather meagre, and suffers more from the cold than it does in the woods. There, however, it is always beautiful. I once traveled up the Mississippi during the season of its bloom. Occasionally our boat would sweep in sight of a forest of Magnolias, which, covered with their beautiful and fully expanded flowers, presented one of the most beautiful sights I ever witnessed. As we neared the shore, the whole air seemed laden with fragrance, and to add interest to the scene, a flock of bright-winged Paroquets were glancing amid the green foliage and the luxuriant undergrowth of the forest. The *Magnolia glauca* grows freely in the swamps, but it is seldom seen in the gardens. It may be considered here, as much an evergreen as the grandiflora. The Sweet Gum is another common tree here, and in my opinion the most beautiful. When it has attained any great size, it is covered with a peculiar corky excrescence on the branches, that, when it sheds its leaves, gives it a singular and not uninteresting appearance.

The deciduous Cypress is the most common tree of the swamps and woods, but it is rarely applied to any ornamental use, beautiful as it is. Both Loudon and Michaux fall into the error of supposing the timber of this tree to be durable. It decays sooner than that of almost any other tree, and is peculiarly susceptible to the attacks of insects, when employed in the construction of houses. It grows to an enormous size, and presents a remarkable appearance with, (as is almost always the case,) its branches covered with the huge green moss peculiar to this climate. In walking through the forest, one is struck with the singular excrescences called Planter's or Cyprus Knees, that rise in every direction from the roots, from two to five feet in height. They never vegetate.

I have not been able to find either the *Gordonia lasianthus* or *pubescens* in the nurseries; nor, indeed, have I found a single nurseryman here that knows them even by name. Yet they are natives of the south, and from their habits of flowering very early, are well worthy of any shrubbery. Until it attains great age, the Live Oak is far from being a beautiful tree. A collection of them looks exactly like an old apple orchard. In the spring of the year, the Water Oak is far more beautiful. Its bright green leaves, which put forth very early, are really beautiful.

The grape-vine does not produce well here. Higher up, at Natchez, there are several vineyards. The principal grape cultivated is the Scuppernong or Roanoake. It is said to make a palatable wine. In a small yard in Natchez, attached to the residence of Mr. James Carson, a gentleman of that place, who delights in horticulture, stands what I

believe to be the original of the far-famed Ohio, or Cigar-box Grape, of Mr. LONGWORTH. The leaves and growth of the plant are the same, and no difference exists in the taste of the fruit or the formation of the bunches. It is there known by the name of the Jack Grape, so called from an old Spaniard of the name of JAQUES, who introduced the vine. I do not think it a native grape. The vine, when I saw it in 1840, was trained to a small arbor, and had on it more than *two thousand bunches* of grapes, many of them a foot in length. Mr. C. informed me that many years previous he had sent Mr. LONGWORTH the cuttings from this vine, on several occasions as opportunity offered, but had never heard of their being received. There are other matters in and about Natchez, in the horticultural line, worthy of notice, but as my notes have already exceeded what I intended, I must conclude for the present. SYLVANUS.

New-Orleans, March 20, 1851.

THE PEOPLE'S PARK AT BIRKENHEAD, NEAR LIVEROOL.

BY W., STATEN ISLAND, NEW-YORK.

BIRKENHEAD is the most important suburb of Liverpool, having the same relation to it that Brooklyn has to New-York, or Charlestown to Boston. When the first line of Liverpool packets was established, there were not half a dozen houses here; it now has a population of many thousands, and is increasing with a rapidity hardly paralleled in the New World. This is much owing to the very liberal and enterprizing management of the land-owners, which affords an example worthy of consideration in the vicinity of many of our own large towns. There are several public squares, and the streets and places are broad, and well paved and lighted. A considerable part of the town has been built with uniformity, and a reference to general effect, from the plans, and under the direction of a talented architect, GILLESPIE GRAHAM, Esq., of Edinburgh.

We received this information while crossing the Mersey in a ferry-boat, from a fellow passenger, who, though a stranger, entered into conversation, and answered our inquiries, with frankness and courtesy. Near the landing we found, by his direction, a square of eight or ten acres, enclosed by an iron fence, and laid out with tasteful masses of shrubbery, (not trees,) and gravel walks. The houses about were detached, and though of the same general style, were sufficiently varied in details not to appear monotonous. These were all of stone.

We had left this, and were walking up a long, broad street, when the gentleman who had crossed the ferry with us, joined us again, and said that as we were strangers, we might like to look at the ruins of an abbey which were in the vicinity, and he had come after us; that if we pleased he might conduct us to it. What an odd way these Englishmen have of being "gruff and reserved to strangers," thought I.

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Did you ever hear of Birkenhead Abbey? I never had before. It has no celebrity, but coming upon it so fresh from the land of Youth as we did, so unexpecting of anything of the kind—though I have since seen far older ruins, and more renowned, I have never found anything so impressively aged.

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At the Market place we went into a baker's shop, and while eating some buns, learned that the poorest flour in the market was American, and the best, French. French and

English flour is sold in sacks, American in barrels. The baker asked us if American flour was *kiln dried*, and thought it must be greatly injured, if it was not, on that account. When we left, he obligingly directed us to several objects of interest in the vicinity, and showed us through the market. The building is very large, convenient, and fine. The roof, which is mostly of glass, is high and airy, and is supported by two rows of slender iron columns, giving to the interior the appearance of three light and elegant arcades. The contrivances to effect ventilation and cleanliness, are very complete. It was built by the town, upon land given to it for the purpose, and cost $175,000.

The baker had begged of us not to leave Birkenhead without seeing their new Park, and at his suggestion we left our knapsacks with him, and proceeded to it. As we approached the entrance, we were met by women and girls, who, holding out a cup of milk, asked us—"Will you take a cup of milk, sirs! Good, cool, sweet, cow's milk, gentlemen, or right warm from the ass." And at the gate were a herd of donkies, some with cans of milk strapped to them, others saddled and bridled, to be let for ladies and children to ride.

The gateway, which is about a mile and a half from the ferry, and quite back of the town, is a great massive block of handsome Ionic architecture, standing alone, and unsupported by anything else in the vicinity, and looking, as I think, heavy and awkward. There is a sort of grandeur about it that the English are fond of, but which, when it is entirely separate from all other architectural constructions, always strikes me unpleasantly. It seems intended as an impressive preface to a great display of art within. But here, as well as at Eaton Park, and other places I have since seen, it is not followed up with great things—the grounds immediately within the grand entrance being very simple, and apparently rather overlooked by the gardener. There is a large archway for carriages, and two smaller ones for those on foot; on either side, and over these, are rooms, which probably serve as inconvenient lodges for the laborers. No porter appears, and the gates are freely open to the public.

Walking a short distance up an avenue, we passed through another light iron gate into a thick, luxuriant, and diversified garden. Five minutes of admiration, and a few more spent in studying the manner in which art had been employed to obtain from nature so much beauty, and I was ready to admit that in democratic America, there was nothing to be thought of as comparable with this People's Garden. Indeed, I was satisfied that gardening had here reached a perfection that I had never before dreamed of. I cannot attempt to describe the effect of so much taste and skill as had evidently been employed; I will only tell you, that we passed through winding paths, over acres and acres, with a constant varying surface, where on all sides were growing every variety of shrubs and flowers, with more than natural grace, all set in borders of greenest, closest turf, and all kept with most consummate neatness. At a distance of a quarter of a mile from the gate, we came to an open field of clean, bright, green-sward, closely mown, on which a large tent was pitched, and a party of boys in one part, and a party of gentlemen in another, were playing cricket. Beyond this was a large meadow with rich groups of trees, under which a flock of sheep were reposing, and girls and women with children, were playing. While watching the cricketers, we were threatened with a shower, and hastened back to look for shelter, which we found in a pagoda, on an island approached by a Chinese bridge. It was soon filled, as were the other ornamental buildings, by a crowd of those who, like ourselves, had been overtaken in the grounds by the rain; and I was glad to observe that the privileges of the garden were enjoyed about equally by all classes. There were some who even were attended by servants, and sent at once for their carriages, but a large

proportion were of the common ranks, and a few women with children, or suffering from ill health, were evidently the wives of very humble laborers. There were a number of strangers, and some we observed with note-books, that seemed to have come from a distance to study from the garden. The summer-houses, lodges, bridges, &c., were all well constructed, and of undecaying materials. One of the bridges which we crossed was of our countryman, REMINGTON's patent, an extremely light and graceful erection.

I obtained most of the following information from the head working gardener.

The site of the Park and Garden was ten years ago, a flat, sterile, clay farm. It was placed in the hands of Mr. PAXTON in June, 1844, by whom it was laid out in its present form by June of the following year. Carriage roads, thirty-four feet wide, with borders of ten feet, and walks varying in width, were first drawn and made. The excavation for a pond was also made, and the earth obtained from these sources used for making mounds and to vary the surface, which has been done with much *naturalness* and taste. The whole ground was thoroughly under-drained, the minor drains of stone, the main, of tile. By these sufficient water is obtained to fully supply the pond, or lake, as they call it, which is from twenty to forty feet wide, and about three feet deep, and meanders for a long distance through the garden. It is stocked with aquatic plants, gold fish and swans.

The roads are McAdamised. On each side of the carriage way, and of all the walks, pipes for drainage are laid, which communicate with deep main drains that run under the edge of all the mounds or flower beds. The walks are laid first with six inches of fine broken stone, then three inches cinders, and the surface with six inches of fine rolled gravel. All the stones on the ground which were not used for these purposes, were laid in masses of rock-work, and mosses and rock-plants attached to them. The mounds were then planted with shrubs, and Heaths, and Ferns, and the beds with flowering plants. Between these, and the walks and drives, is everywhere a belt of turf, which, by the way, is kept close cut with short, broad scythes and shears, and swept with house-brooms, as we saw. Then the rural lodges, temple, pavilion, bridges, orchestra for a band of instrumental music, &c., were built. And so, in one year, the skeleton of this delightful garden was complete.

But this is but a small part. Besides the cricket and an archery ground, large valleys were made verdant, extensive drives arranged—plantations, clumps, and avenues of trees formed, and a large park laid out. And all this magnificent pleasure-ground is entirely, unreservedly, and forever the People's own. The poorest British peasant is as free to enjoy it in all its parts, as the British Queen. More than that, the Baker of Birkenhead had the pride of an OWNER in it.

Is it not a grand good tning? But you are inquiring who *paid* for it. The honest owners—the most wise and worthy town's people of Birkenhead—in the same way that the New-Yorkers pay for the Tombs, and the Hospital, and the *cleaning*, (as they amusingly say,) of their streets.

Of the farm which was purchased, one hundred and twenty acres have been disposed of in the way I have described. The remaining sixty acres, encircling the Park and Garden, were reserved to be sold or rented, after being well graded, streeted and planted, for private building lots. Several fine mansions are already built on these, (having private entrances to the park,) and the rest now sell at $1.25 a square yard. The whole concern cost the town between five and six hundred thousand dollars. It gives employment at present, to ten gardeners and laborers in summer, and to five in winter.*

* "When the important advantages to the poorer classes, of such an extensive and delightful pleasure ground, are taken into consideration, no one will be inclined to say that such an expenditure does not merit the most unbounded suc-

The generous spirit and fearless enterprise, that has accomplished this, has not been otherwise forgetful of the health and comfort of the poor.* Among other things, I remember, a public wash and bathing house for the town is provided. I should have mentioned also, in connection with the market, that in the outskirts of the town there is a range of stone slaughter-houses, with stables, yards, pens, supplies of hot and cold water, and other arrangements and conveniences, that enlightened regard for health and decency would suggest.

The consequence of all these sorts of things is, that all about, the town lands, which a few years ago were almost worthless wastes, have become of priceless value; where no sound was heard but the bleating of goats and braying of asses, complaining of their pasturage, there is now the hasty click and clatter of many hundred busy trowels and hammers. You may drive through wide and thronged streets of stately edifices, where were only a few scattered huts, surrounded by quagmires. Docks of unequalled size and grandeur are building, and a forest of masts grows along the shore; and there is no doubt that this young town is to be not only remarkable as a most agreeable and healthy place of residence, but that it will soon be distinguished for extensive and profitable commerce. It seems to me to be the only town I ever saw that has been really built at all in accordance with the advanced science, taste, and enterprising spirit that are supposed to distinguish the nineteenth century. I do not doubt it might be found to have plenty of exceptions to its general character, but I did not inquire for these, nor did I happen to observe them. Certainly, in what I have noticed, it is a model town, and may be held up as an example, not only to philanthropists and men of taste, but to speculators and men of business.

After leaving the Park, we ascended a hill, from the top of which we had a fine view of Liverpool and Birkenhead. Its sides were covered with villas, with little gardens about them. The architecture was generally less fantastic, and the style and materials of building more substantial than is usually employed in the same class of residences with us. Yet there was a good deal of the same *stuck up*, and uneasy pretentious air about them, that the suburban houses of our own city people so commonly have. Possibly this is the effect of association in my mind, of steady, reliable worth and friendship with plain or old fashioned dwellings, for I often find it difficult to discover in the buildings themselves, the elements of such expression. I am inclined to think it is more generally owing to some disunity in the design—often perhaps to a want of keeping between the mansion and its grounds or its situation. The architect and the gardener do not understand each other, and commonly the owner or resident is totally at variance in his tastes and intentions from both; or the man whose ideas the plan is made to serve, or who pays for it, has no true independent taste, but had fancies to be accommodated, which only follow confusedly after custom or fashion. It is a pity that every man's house cannot be really his own, and that he cannot make all that is true, beautiful, and good, in his own character, tastes, pursuits and history, manifest in it.

But however fanciful and uncomfortable many of the villa houses about Liverpool and Birkenhead appear at first sight, the substantial and thorough manner in which most of them are built, will atone for many faults. The friendship of nature has been secured to them. Dampness, heat, cold, will be welcome to do their best. Every day they will im-

cess, and the deepest public gratitude. Here nature may be viewed in her loveliest garb, the most obdurate heart may be softened, and the mind gently led to pursuits which refine, purify, and alleviate the humblest of the toil-worn."

* "Few towns, in modern times, have been built with such regard to sanitary regulations, as Birkenhead, and in no instance has so much been done for the health, comfort and enjoyment, of a people, as by those energetic individuals with whose names the rise and progress of Birkenhead are so intimately connected." *Dr. J. H. Robertson.*

prove. In fifty or a hundred years, fashions may change, and they will appear, perhaps, quaint, possibly grotesque—at any rate, picturesque—but still strong, homelike, and hospitable. They have no shingles to rot, no glued, and puttied, and painted gim-crackery, to warp and crack, and moulder, and can never look so shabby, and desolate, and dreary, as will nine-tenths of the buildings of the same denomination now erecting about New-York, almost as soon as they loose the raw, cheerless, impostor-like airs which seem almost inseparable from their newness. WAYFARER.

We are very much indebted to our correspondent for his clear and pleasing account of one of the most interesting public places of enjoyment in all Europe—and all the more interesting, because it has been formed by the people themselves, and not made and presented to them by the sovereign. We only regret that the people of our large cities, generally, cannot see, with their own eyes, the beauty, and realize the advantages of such parks in the midst of towns. New-York, for instance, now one of the largest cities in the world, has no public park, whatever—no breathing place, no grounds for the exercise and refreshment of her jaded citizens—for to call the little *yards* of land, covered with turf, and planted with trees, in various parts of the town, *parks*, is as much a misnomer as it would be to spread one's handkerhief down on the floor of the rotunda of the capitol, and call it a carpet.

The fact is, Americans generally, have no conception of the value, extent, or importance to the people of large cities, of public parks—and among the good results that will grow out of the World's Fair in London, will be that of showing thousands of them, Hyde Park, where the Crystal Palace stands—a building that covers twenty acres, and appears to take up as little room there, as if it were in an oak opening in Illinois.

We are glad to be able to say, *en passant*, that the government at Washington are manifesting a lively interest in this subject. The large tract of unimproved public lands lying south of the city of Washington—consisting of between one and two hundred acres, has just been taken in hand, at the desire of the President, with the view of making a NATIONAL PARK—something really worthy of the name. If his views can be fully carried out, that Park may exert an influence on the public taste of the whole country, as well as embellish and improve, in the highest degree, its seat of government. ED.

NOTES ON THE CULTURE OF MELONS IN THE NORTH.

BY C. SMITH, NEWPORT, N. Y

THE Melon is one of the greatest luxuries that can be grown in our climate,* provided we have it ready for the table during the warm season. But if it is not matured and ripened until the chilly days of September, it loses its delicious flavor, and will hardly pay for cultivation. Those who grow it, therefore, should bear in mind that the harvest must be made in August, and early in September, in order to realize either profit or pleasure. Of course, it is easy to start the plants soon enough, but how to remove them from the hot-bed to open culture, without stopping their growth from two to three weeks, is what I have not been able to accomplish. Even when the plants were growing on inverted sods, the same check in their growth would take place, although it would seem that the roots of the vines could not have been disturbed to the smallest extent. I know of no vegetable

* I write, of course, for the northern part of the Union—for all over the southern and south-western portions, melons are as plenty as blackberries.

so sensitive to the slightest injury in the process of transplanting, or change of location, as the melon.

To obviate this impediment, and yet to obtain the fruit at the season desired, I have adopted with success, the following method, which may, perhaps, prove interesting to those who attempt the melon culture anywhere north of New-York city.

About the 20th of April, and sooner, if the season will permit, I spread a generous dressing of well rotted manure, broadcast over the ground intended to grow the vines upon, and plow it under. Let the drag or cultivator follow the ploughing, until the soil is finely pulverised. The hills should not be less than seven feet apart. Procure two bushels of highway sand,* and place that quantity where each hill is to be grown. If this cannot be easily obtained, sand thrown upon the bank, and left there by running water, is equally appropriate, or sand dug out of the earth, two feet below the surface, is nicely adapted to the purpose. At any rate, find sand, and nothing but sand, to make the hills of, and if its energies were never taxed to grow any crop whatever, so much the better. Spread the soil thus supplied, over a surface of two feet in diameter. This will raise the hill five or six inches above the surrounding surface, which will favor the growth of the melon, though it might injure most other vegetables. Plant the seed half an inch deep. This will insure moisture sufficient for the purpose of germination; and if the seed of any vegetable whatever, be buried deeper than it need be, to secure that amount of humidity, the product will not be so abundant, nor will it be perfected as soon as it would, had it not had an unnatural obstacle to surmount and overcome. I should have said, that before depositing the seed, the sand referred to should be thoroughly incorporated with powdered charcoal, saturated with urine, and mixed with a fortieth part of its bulk of guano or fowl manure. This can easily be prepared six or eight weeks in advance of the time when it will be wanted. Sprinkle as much coal dust over the surface of the hill as will give it the dark color of charcoal, and then over the place where the seeds have been buried lay a pane of glass flat upon the ground. Now, if those seeds do not germinate in five or seven days, it will be because the sun does not show himself. Whenever the orb of day peeps out, the germinating process will proceed with all the rapidity that it would in a hot-bed under the most favorable condition.

Uusually, in a week, the glass must be raised to let the plants through, and placed on four bricks arranged about the vines, where they will do finely until about the middle of May, when the glass should be taken away, and a box two feet over and six inches deep, covered with coarse milinet or cheese binding must be put over each hill. This will prevent the evaporation of moisture, and keep the cold winds from the plants, and it is the only sure protection against the injuries usually inflicted by the striped bug. If the boxes are more than half a foot deep, they will shade the vines too much, and cause them to run up tall and slender, to their permanent injury. If the ground about the hill is kept black with coal powder, and the season prove favorable, the Citron Melon will be fully ripe in 112 days from planting; without the coal it will be two weeks later, and not quite up to standard in flavor. The coal dust keeps off that great enemy, the cut-worm. It is not offensive to the worm, but gets up such a degree of heat that it will turn away to avoid it. The boxes should not be removed until the vines begin to be cramped in their growth by them. The weeds may be kept down, and the soil stirred easily until the middle of June, by passing a cultivator between the rows. This process should be repeated often.

If the manure, or a part of it, is spread over the ground, instead of being all put in the

* Our correspondent proceeds on the supposition that the soil is a loamy one—if naturally very sandy, of course this is not needed. Ed.

hill, and the whole soil kept loose and mellow by faithful cultivation, the roots will extend to a great distance, much to the advantage of the fruit that sets latest, and to the amount of the crop. And this holds good not only with this vine, but all its congeners. The natural habit of the roots of this class of vegetable productions, is to reach far in all directions. This the cultivator should assist and encourage; if he does not he will interfere with his own reward for his industry. Let the bulk of his manure be spread over the whole ground, and then place sufficient in a hill so that the vegetable body may never one moment of its existence fail to expand itself for want of nourishment. If a plant, in the early stages of its life, wants for a few days only, its proper sustenance, it will never fully recover from the effects of the misfortune. A want of nutrition, also, at the time the fruit begins to form and mature, is still more destructive, and that fertilizer which was spread broadcast over the soil, now comes to the rescue and ensures success.

The labor we have referred to, may appear large to be bestowed on one item of the garden; perhaps it is so. Yet it will abundantly repay every step taken, and every finger lifted. Six weeks of melons in abundance, for ourselves and friends, is worth twice the efforts needed for their production.

I think it was nine years since, that I began to experiment with the Yellow Flesh Melon, with a view to improve its size. I began with specimens weighing six or seven pounds, and ended the last season with a crop averaging between twenty and thirty pounds. I would leave but one fruit on a vine, which would become large. From the seeds of this improved specimen, I would plant the next year, and this operation repeat every season. The gain was gradual for several years, and then became more rapid. The last year the improvement in size was greatest. The melons were grown in open culture, planted about the 20th May. The flavor of this melon has not deteriorated, nor can I perceive in that matter, any change. For productiveness and easy cultivation, I know of nothing better than the Christiana. For excellence of flavor, the Citron has no superior. If there is a better water-melon than the Black Spanish, I have not been able to find it.

SUCCESSFUL CURCULIO PRACTICE.

BY O., OWEGO, N. Y.

Mr. Downing—Dear Sir: I send you an account of the method I have successfully practiced during eight years, in protecting my plums from the depredations of the curculio.

I will first mention some facts relative to the habits and natural history of that destructive insect, the knowledge of which I acquired, part by observation, and partly by reading an article on insects from the pen of the lamented Willis Gaylord.

Generally, as soon as the plum has attained the size of a full grown currant, the curculio ascends [or flies to, Ed.] the tree, and, making a semilunar puncture in the plum, deposits an egg in it; commonly only one egg is deposited in a plum, but sometimes two eggs are found in the same plum. These eggs become larvæ or grubs, that feed on the pulp of the plum, which finally causes the plum to fall to the ground before it is ripe. After the maggot or larvæ, as the embryo insect is frequently called, attains a sufficient size, it crawls out of the plum, goes into the earth, stays there about twenty-one days, and comes out a perfect insect. These new insects ascend the tree, either by climbing or flying, puncture the plums and deposit their eggs. These eggs become larvæ, feed on the pulp

of the plums until they fall to the ground, and, when they have attained the proper size, they crawl out of the plum, go into the earth, stay there their allotted time, twenty-one days, become perfect insects, come out of the earth, ascend the trees and perform the same destructive operations that their predecessors did. Thus we perceived that several generations of that most destructive pest, to stone fruits generally, are produced in one season.

Reflecting on these facts, I concluded that if we would destroy the insects in their embryo state, we should preserve our stone fruits from their depredations. I made the experiment; and its success exceeded my most sanguine expectation; for, instead of from half a dozen to a dozen ripe plums, my usual annual crop from one tree, I had three measured (not estimated,) bushels, and I had that amount annually from one tree, until it was destroyed by the disastrous fire that laid waste our village in the autumn of 1849.

Early in the spring I remove all grass and weeds from the vicinity of the trees; I then level and smooth the surface of the ground around the trees, and make it as hard as I can, by beating it with the surface of a spade or hoe. It is then prepared for being easily swept with a common broom. As soon as the young plums attain the size of a full grown currant, I shake the trees with some violence early in the morning,—*early* because the curculio is somewhat torpid then in consequence of the coldness of the night, and it is therefore more easily detached from the tree; I then collect, by sweeping, everything that falls from the tree, whether insects or plums, and commit the sweepings to the flames or throw them into boiling water, and by that means destroy both the insects and their embryos. If the punctured plums are thrown into cold water, the insects are hatched, about as readily, as if they were suffered to lie on the ground, as I have witnessed in several instances. It is necessary to continue this shaking and sweeping and burning daily, until the plums are ripe. When the ground around the trees is properly prepared for sweeping, as above mentioned, it requires less than five minutes each day to shake three trees, sweep, and commit to the flames the collected sweepings. The time was measured, not estimated. If the ground around the trees is closely covered with flat stones, bricks or boards, the fruit is effectually protected from destruction by the curculio, unless that pest is suffered to breed in the vicinity. The punctured plums should not be permitted to lie long on the ground, lest the embryo insect should crawl out and go into the earth. The above statements can be relied on; they are facts deduced from actual practice. I think we may justly conclude from them, that a proper concert of action, on the part of the owners of stone fruit trees, would effectually preserve our plums from the devastations of the curculio.

The curculio sometimes feeds on ripe plums, but more commonly, I believe, on the succulent and tender extremity of the branches near the terminal bud. It frequently bites off the terminal bud of the leading shoot. After it has fed, it conceals itself on the under surface of a leaf, where it usually spends the day, unless the day is cloudy and dark. I believe it moves about more during the night than during the day. I do not know what becomes of it on the approach of cold weather. I think it hybernates in the earth. I have seen it go into the crevices of the ground.

I have made some efforts to discover the insect that causes the excrescences which destroy so many plum and cherry trees, but, thus far, my efforts have been unavailing. I have tried to hatch the larvæ in the house, but soon after the limbs, containing the excrescences, were severed from the tree, the larvæ died. On examining these excrescences in a green state, I found the texture of the saw-wood converted from a fibrous into a granular state. When the excrescences become numerous on the limbs, the circulating fluid seems to be so vitiated that it does not afford its wonted nutriment to the tree, or, what, perhaps,

is more likely, after the nutriment has been elaborated by the appropriate organs, the fibrous texture is destroyed to such a degree that the elaborated nutriment can not be carried through the proper vessels to its destined places, and the tree therefore dies. The excrescence insect seems to prefer the morello cherry tree to any other tree. I have seen that tree, standing among young and vigorous plum trees, destroyed, while the plum trees remained untouched.

I have been acquainted with the wild plum tree for nearly half of a century, and I do not remember to have seen an excrescence on any of them. The curculio generally destroys its fruit. A gall insect often preys on the wild plum and wild cherry also, converting both the plum and the cherry into large, irregular bladder-like masses. The wild plum tree does not grow so fast as the cultivated plum tree, but is much longer lived. I have seen them more than a foot in diameter in this vicinity, and I think three quarters of a century old. The cultivated plum, inocculated or ingrafted into the wild stock, grows well. I recently measured a thorn tree in this vicinity, sixteen inches in diameter. The apple tree ingrafted into the thorn, grows well here. Respectfully yours. O.

Owego, N. Y., March, 1851.

THE MANAGEMENT OF GREEN-HOUSE PLANTS AT THE SOUTH.

BY JAMES STEWART, MEMPHIS, TENN.

To be a thorough *good plant-grower* requires no mean competency, and an amount of practice by no means insignificant. But to be such in the southern states, is almost saying you have reached perfection in the art. Doubtless this will appear singular, and will be strongly questioned by those who are accustomed to the climate of England, or other parts of Europe, and who imagine they have a deal more to contend with, than it is possible to have in such a favorable climate as that of America. These, as well as perhaps some plant owners, are apt to suppose that good practical "plantsmen" are not yet among us, to take the matter in hand. But that is not the case, as we have as competent men in that department as any country can produce; and nothing more or less than the scorching heat of American tropical summers, which is so overpowering in its effects of parching the leaves and drying their substance, weakening and exhausting others, and even dissolving some of a certain class, and notwithstanding the efforts and energies of the gardener, he will be even threatened, in some instances, with the entire loss of his stock. Large plants that are of any age, seem as though they were more exposed, and in all cases are the greatest sufferers. Small and young stock will always survive best, and consequently we have always, with such, to be pretty well supplied; we water largely, and syringe freely, but this is in an hour wasted and consumed by a burning atmosphere. Again, the variations of seasons such, as extremes of wet or dry, or sudden interchanges of both, defy all rules. To be a plantsman here, you must be directed by nature's laws, paying the closest attention to the great excesses of temperature which belong to a climate partly temperate and partly tropical.

The winter division here, that is after the heat of summer declines, and before it regains its power in the spring, is to a certainty, of all the climes I have practiced in, the most favorable. We may pot, repot, reduce balls of earth, shake them to pieces, or whatever else necessity and proper management directs. Nature assists at this season, and every thing prospers well and grows luxuriantly. A charming sight certainly, is a well kept and well

managed green-house, all throughout this season. Next comes the summer division, the season of extreme heat, with strange contrast in its effects. The rich gum of your soft wooded plants will, if plants are exposed as they would be in England, change into a sickly yellow appearance, which will soon deprive them of nearly all their foliage, leaving the whole in such a feeble condition as to be hard for them to exist. Then is the time the gardener enters upon his difficulties. Then is the time that the unacclimated practitioner and the unskilful amateur will be confounded. They naturally suppose that something must be done to bring them back to their usual condition, and to stay them from getting any worse; putting in fresh soil, and a little cutting to excite them into fresh growth, is resorted to, but instead of getting better they get worse, and many of them die. Perhaps soil and situation are supposed to have been unsuitable, and all is again changed, but they will gradually drop off till probably all perish. Such is the result of applying common practice to green-house plants in the south. Your *hard-wooded* plants, and all that are not the growth of a few months, will not be effected so visibly, and you may venture to repot such in the event of additional room being required. But it should be law among the plant growers in the southern United States, not to destroy root or branch during this season, for just as sure as they do so, certainly they will loose their plants. They may look shriveled, yellow, or leafless, but be glad if you can save the wood, and to do this you must be strictly careful that everything stand in the shade—a place in the shade of trees but *not under* them will do very well—but the north side of a building is much better. The most delicate ought to be protectible from the destructive rain-storms. The summer site being chosen and the plants placed in it, they must be kept moist by watering them twice a day—morning and evening. Do not become uneasy and think, because they are looking tolerably well, that a *repotting* or some other process, would assist them. If you do so, the chance is ten to one that you will make the worst of a good job. As the season grows cooler, they will show signs of commencing to grow, but even then do not be in a hurry; let all dangers and hazards of the hot season be over, before you prepare for winter and its entirely altered condition.

As to the various plants that are sown throughout summer for winter bloom, such as the Chinese Primrose, Mignonette, and other annuals, in four seasons out of five, you fail to bloom them here before February, because you cannot get a sowing to stand before late in September or October, but to overcome the difficulty, I sow as late in spring as possible, and let them remain in the seed pot, in the shade, with all the rest, till the growing season commences at the south, and the gardener must be wide awake to get his plants ready for it. There is something to do and to be done, as well after the heat of the season has so far declined as to allow the plants, which are still in their shaded situation, to commence their growth; let them be fairly started to prove that the season of rest is complete and the season of growth has begun. Then is the proper time to commence potting. A great part of the collection will want their balls examined and divested of nearly all the soil in which they grew last year; others must be reduced to suit the condition of their roots.

I wish here to make a few remarks on soil, drainage, and watering, as they form part of the general system of culture. Compost, according to nearly all writings and practitioners, must be of as many kinds and natures as you have genera in your collection, and many pages, and much time, are spent in collecting and mixing them. In all this routine I was educated; I have, perhaps, seen as systematic a practice as any body, but experience has taught me that all such detail respecting compost, is unnecessary. A theorist may suppose, and may state, that each variety of plant must have a different soil, or mixture of soils, and quite natural it may appear to be; but I have satisfied myself it is but

theory. Some years ago I came to the conclusion, that practically, we need only two soils, loam and peat; the former I use free from any mixture whatever, for all the general assortment of plants, excepting such as camellias, to which I add half the latter, and to *hair-rooted plants*, (heaths, &c.) I use the latter. To the cactus tribe, I use, with the former, a little lime-rubbish or sand. I never use manure under any circumstances, in the compost. The soil I obtain from where I can get it most convenient and suitable, although I decidedly prefer and recommend soil to be collected with all the rough herbage, bones, &c., and to be piled up to lie *undisturbed* at least two years. I find sods from an old pasture give the best loam, and when well decomposed they are rich in vegetable matter.

Next comes draining, a subject which occupies more room in horticultural pages, and has been so long and universally practiced, that it is the height of boldness to assail its value. But let me invite the gardener at the south to stop and look into it, and ask if such is really necessary, and for what reason. "Why certainly, it is," he will reply; "every article you read, and every gardener you meet, declares it needful, to prevent the plants being flowed with superfluous water." My answer is, that if a gardener does not know such a small portion of soil, of elevated, movable soil, as is contained in a flower-pot, without a drain, or how and when to water a plant, without surcharging and saturating it, it will be, by all means, advisable for him to employ a drain; but for a man who really is competent in the plant department, I contend a drain of some two or three inches of broken pieces in the bottom of the pot, is, in a dry climate, worse than useless. The pots are ready and clean, inside and out, and a heap of soil is collected free from any foreign mixture. This I use in as rough a state, (without sifting,) as the size of the pot may allow. I make the soil compact in potting, by beating the bottom of the pot on the poting bench. Never by pressing with stick and fingers. The bad effects of the latter are *unseen* and unknown to the inexperienced, but bad effects they often are. After potting, place the plants in the situation you have for each species. If such situation be at all adapted, they will soon show a rich appearance of sound, healthy growth, though they are always to be found in different stages; some more delicate, and not fit to feed on anything but the *pure soil*, others growing quite robust, and therefore ready to use *something stronger*. In the latter case, I commence manure watering, by the use of guano, a strong solution of which I keep mixed up in a tub, and as I pass with the water pots, I add half a pint or half a gallon, or in other words, make it strong enough to suit the condition of the plants, and so on continue all the growing season, with additional pot room, and more and stronger liquid feeding. This, however, must be gradually withdrawn as the hot season approaches. When the growth ceases, the plants can no longer digest liquid manure, and suffer by it.

JAMES STEWART.

Memphis, Tennessee.

A WORD OR TWO MORE ON LAWNS.

BY A. B. ALLEN, NEW-YORK

DEAR SIR—I agree with you fully in your preference of blue grass and white clover for a lawn; they undoubtedly make the finest and softest turf of any of the grasses grown in the United States. But allow me to add to your excellent observations on the prepation of the ground before sowing, that blue grass and white clover delight in a calcarious soil. If lime then does not already exist in the soil, it should be added in doses of at least

50 bushels per acre, once in three to five years, till 300 bushels per acre is thoroughly well incorporated in the soil. In addition to the lime, it would be well to sow two bushels of plaster of Paris on each acre early every spring. Plaster is the direct food of the clover family, and is beneficial also to blue grass.

Another grass is getting to be in great repute in this vicinity for lawns, and this is the English perennial *ray* grass—not *rye* grass—that is quite an inferior kind of grass, and it is not perennial.

After preparing the lawn as recommended by you, sow at the rate of three bushels per acre; mix no other seed whatever with it, otherwise it will be likely to come up in tufts. August and March are the best months in this climate to sow ray grass. It has been cultivated for several years as far north as Connecticut, and south as far as the lower part of North Carolina; and when properly sown and cared for, it has given entire satisfaction, even as a *field* crop. It is in high repute for grazing, and yields almost as great an annual burthen as orchard grass. It has rather a coarse stalk and is of a rank growth; but when this comes to be cut often and close, in the manner of lawns, the grass grows finer and very thick; and forms the most elastic and velvety turf I have ever trod in the United States. It is about ten years since ray grass was first introduced into this neighborhood.

One more word about the treatment of lawns in our hot climate, and I have done. It is best to mow them in the afternoon, and just before a shower if possible, [but a *lawn* cannot be closely mown except when there is some moisture on the grass. Ed.] Irrigate, if you have water, for several evenings after mowing, if the weather be dry. If you cannot irrigate, then scratch the whole surface with a fine tooth harrow, or iron rake, spread a light dressing of swamp muck or compost upon it, and always roll hard with an iron roller the morning after mowing.

A. B. Allen.

New-York, April 9, 1851.

SEASONABLE HINTS.

BY AN OLD DIGGER.

If you wish to raise the earliest vegetables, or get the best growth possible in any annual plant, be sure to use well rotted manure. The chemists may say what they please about the loss of ammonia and the gases, and what they say about the actual waste in letting manure rot before using it, is true enough, doubtless. But setting that aside, practice has told me, time and again, that I can get a crop of peas four or five days earlier than my neighbors, in the same soil, by using manure a year old, and *quite fine*, when they use it almost as fresh as when it first comes from the stable. The fact is, fresh manure is like corned beef and cabbage—very hearty food, but requiring a strong stomach. Annuals of moderate growth, like something easier of digestion. As all old gardeners know this by constant trial, you can no more beat the value of rotted manure out of their heads, than you can make an elder bush bear white berries, by scolding it.

It is quite wonderful what a passion some men have for what *they* call *pruning* trees, and what I call murdering them by inches. Only put a knife or saw into their hands, and a tree before them, and you will see that it is only because they were not born Caliphs of Bagdad, that their neighbors have any heads left on their shoulders. Gardeners from the "auld countrie"—especially all such as have served their time behind a wheel-barrow,

are mighty fond of this sort of thing. One of these "gintlemen" was lopping off and utterly despoiling the natural ways of a fine linden tree lately. When he was cross-questioned a little as to what he was about, ruining the tree in that manner, he replied—"Bless yer sowl—I'm only a littin the *hair* intil it!" But in fact, many a better gardener than this Paddy—many a man who has done as good things in the gardening way in Great Britain, as can be done any where in the world, is placed in the same awkward fix when he comes into a country with a dry, hot climate, like the United States. All his life-long has he been busy learning how to "let the air in" to the top, and keep the wet away from the roots, till it is a second nature to him, and he finds it almost as impossible to adopt just the contrary practice when he gets to America, as it is for a Polar bear to lay aside his long, white furry coat, and walk about like a tropical gentlemen in his natural nankeen pantaloons and waistcoat. He cuts away at his trees to let in the sun, and raises up his flower beds to drain off the wet, when it is just the very sun and drouth that we have too much of. No man can be a good gardener who will not listen to reason, and in a country where nature evidently meant leaves for umbrellas, take care how you snap your fingers at her, by pruning without mercy, and "*littin the hair in.*"

If you find some of your transplanted trees flagging, and looking as if they were going to say good bye to you, don't imagine you can save them by pouring manure water about their roots. You might as well give a man nearly dead with debility and starvation, as much plum pudding as he could make a hearty meal of. The best thing you can do is, first to reduce the top a little more, (or a good deal more if needful)—for the difficulty most probably is, that we have more top to exhaust than root to supply. Then loosen the soil, and water it if dry, and lastly, *mulch* the ground as far as the roots extend. This you may do by covering it with three or four inches of straw, litter, tan-bark, or something of that sort, to keep the roots cool and moist—so as to coax them into new growth. Watering a transplanted tree every day, and letting the surface dry hard with the sun and wind, is too much like basting a joint of meat before the kitchen fire, to be looked upon as decent treatment for anything living. If your tree is something rare and curious, that you are afraid will die, and would not loose for the world, and yet that wont start out in spite of all your wishes, syringe the bark once every night after sun-set. This will freshen it, and make the dormant buds shoot out.

If you find any of your fruit trees barren, from too great running to wood, about the first of June is the time to shorten back the long shoots, and clip or pinch off the ends of the side shoots, so as to force the tree to expend its substance in making fruit buds, instead of wasting every bit of sap in overgrowth.

Make war upon insects all this month, and especially at the end of it, as if it were the chief duty of man to destroy them—(there is no doubt about its being the chief duty of the gardener.) Tobacco water is your main weapon, and with a syringe or a hand engine, you can, if you take them in time, carry such slaughter into the enemy's camp as would alarm the peace society, if there is one among these creeping things. Slugs on rose bushes, or the green fly on plants, will make their appearance by thousands and tens of thousands, as the weather gets hot, and the nights summery. The time to open your light artillery upon the "inemy," is very early in the morning, or just after sun-down, the latter the better time—by all odds. Find out whether they "roost" on the under or upper side of the leaves, or nibble away at the tender points of the shoots, and shower them to the tune of "Old Virginny," i. e., strong tobacco water. If your plant is of a delicate substance, mind, however, that you don't give *it* a fainting fit, as well as the vermin. Always make the tobacco water by mixing some rain water with it, for such plants, and

if you have had no experience in the matter, dilute and use some on a single plant before you undertake your whole border. After half a day you can tell how it works, and act accordingly. What you want is just strength enough to kill the insect, and not enough to injure the young leaves. Yours, AN OLD DIGGER.

ON THE IMPORTANCE OF MULCHING.

BY A PRACTICAL MULCHER, DEDHAM, MASS.

THOUGH the subject we have placed at the head of this communication, has received some attention from scientific cultivators in certain parts of the country, and allusions to its use and importance have been made in "the Horticulturist," whose different volumes form our best standard book of reference, yet it must be confessed that a thorough treatise upon the subject is a very great desideratum, especially in *this land* of clear skies, arid atmosphere, burning suns, and summer drouths.

There are certain departments of horticulture, and certain processes and operations of the gardener's noble and beautiful art, that either have been overlooked and neglected in this country, or that have not yet had their time and opportunity for development. One is the "Hybernation of Plants;" another "the Proper Feeding of Trees;" another "the Value, Beauty and Cultivation of Evergreens;" and last but not least, "the Benefit of Mulching," to trees, plants, seeds, &c. In some future communication, Mr. Editor, I purpose to give you the results of my observation, experience and reflection upon the former themes, should you allow me, while I confine my remarks, for the present, to the subject of "mulching." In England and on the continent of Europe, this matter is receiving something of the attention it deserves, and yet, if the process has its value on the sea-girt isle of mists and fogs, where old Sol himself shines hardly brighter than our harvest moon, of what vastly greater importance must it be in this climate, where annual and long continued drouths seem a part of the order of nature, and where the hygrometer indicates a greater deficiency of moisture than is known in any European atmosphere. Indeed, I regard *mulching* as *our* prime and especial necessity,—*the* must indispensible thing in North American Horticulture. For in the first place, the operation of mulching,—or covering over the surface of the ground—prevents the evaporation of the moisture that is so requisite to the rooting of new plantations, to the development of luxuriant foliage, and the production of perfect flowers, and fair, juicy large sized fruits. Again: the operation of mulching not only prevents, to a great extent, the escape of moisture, but also, and what is of greater importance, the passing away from the earth of the volatile gases that are held in solution in the water, and which, sucked in by the minute mouths of the radicles or spongioles, give nourishment to the plant or tree.

That mulching is of great value in the case of *young* and *newly planted trees*, by preventing the process of evaporation, is universally admitted in theory, and to a certain extent carried out into practice; and yet, but few seem to be aware of its value in retaining the nourishment as well as the moisture in the earth, and thus, by both these means, contributing to the luxuriant and heathful condition of *plants and trees already rooted, and well established in the soil.* But observation, however, as well as actual experience, has fully convinced me, that trees will not only put forth more luxuriantly, and grow more vigorously, but that *the fruit* will *be far larger, fairer, and juicer*, for mulching during the hot season. And I hazard the observation, that in the culture of pears, and

certain kinds of apples,—such as the Roxbury russet, that are generally small and knerly on a gravelly bottom, careful mulching is *almost* equal to a clay subsoil.

And here let me say, by way of parenthesis, that in the cultivation of these fruits, it is not, I think, any nutritive element in the clay soil, but only its power of retaining moisture, that gives it the advantage over a gravelly substratum. By *carefully mulching*, however, I do not mean a wisp of straw, hay, weeds, or small brush, nor a shovel of spent tan, hub-chips or saw-dust, placed just round the *trunk* of the tree, but *a covering of the ground, if possible, as far as the roots extend.* There are some absurd people, who seem to think, if we are to judge them by their practice, that somewhere at the butt of the tree is a great mouth, in which the tree takes in its food and drink; and, accordingly, they put all the nourishment, whether liquid or solid, "right round" the trunk. Whereas the truth is, the numerous little mouths that drink in the moisture, and the nutritious elements that are disolved in it, are in the little spongioles that form the very terminations of the radical branches; and our course of treatment should be based upon this fact, in watering, manuring, and mulching.

Mulching then, in the *first* place, prevents, in light gravelly soils—and in dry seasons in all soils—the *evaporation of the moisture* necessary to that flow of sap, that shall make a *luxuriant growth, fine foliage* and *fair, large juicy fruit.*

And secondly, as the elements that nourish the tree are contained in the moisture in solution, and a dry state of the earth must thus cut off the supply of food, mulching actually *nourishes the tree.* In proof of this, I might, would my space allow, adduce numerous facts; but experiments are so easily tried, that such evidence is hardly necessary here.

In conclusion, as the season for planting flowers, roots, seeds, &c., is at hand, I must say one word in favor of mulching for them.

Mulch your dahlias,—if you want free, rapid, vigorous growth, and full abundant bloom. Much the best substance or *mulch* for this purpose, is the soft spongy *meadow moss*, though leaves and coarse sedgy meadow hay will do. I have planted two rows of dahlias side by side, trenched them alike—twenty inches deep—manured them alike, and the row that was kept carefully mulched outgrew and outbloomed the other, and put it altogether to shame.

Mulch your flower seeds—"and what do you mean by that?" I mean that flower seeds fail to come up, either from a deficiency or a superabundance of moisture, both of which extremes are obviated by this process.

When you plant your seeds, cover them over with the same spongy moss spoken of above. And, that I may be perfectly understood, here is my recipe for planting flower seeds: Make the earth very fine with a garden knife or common case knife. Scatter your seeds, if small, over the place thus prepared,—if large, bury them a little; press the earth upon them; spread your damp moss, and clap a flower pot or pan over them. When your seeds have started, lift up the pot a little by putting a stick or stone under the south side, and as soon as your seedlings look green and strong, take away the moss, keeping the pot or pan handy against a late frost or chilling wind. In this way, you will rarely have to complain of your seedsman; and you may have early plants and the most delicate kinds without a hot-bed. My friends are putting the continual query, "How do you make all your seeds come up and grow?" This is my secret, and in Prof. LINDLEY'S book you will find it more in detail. Let me say in conclusion: mulch *new plantations* if you wish your trees to live and grow. Mulch your *young trees* if you want them thrifty and luxuriant. Mulch your *old trees* if you desire fine foliage and fair large fruit.

Imitate nature in the fields and forests, who gathers a bed of leaves and moss about the roots of her trees, and follow the advice of AN OLD MULCHER.

Literary Notices.

THE FLOWER GARDEN, *or Breck's Book of Flowers; in which are described all the various hardy Herbaceous Perennials, Annuals, Shrubby Plants, Evergreens, &c., with Directions for their Cultivation.* By JOSEPH BRECK. Boston: published by Jewett & Co.—(1 vol. 336 p. 12 mo.)

[THE following notice of Mr. BRECK'S volume on Flower Gardening, lately published, was received too late for our last number. The volume itself, which we have just seen, and have not yet fully examined, appears to be a very useful and practical hand-book for the amateur in ornamental gardening. ED.]

"BRECK'S BOOK OF FLOWERS," *with hints on Flower-Beds and Flower-Borders.*—Here is a new book,—for which we desire our thanks to the author,—on the delightful subject of horticulture and flowers.

The brightest, the fairest, the sweetest, the loveliest members of the vegetable kingdom,—and, save fair maidens and innocent childhood, the loveliest things in the universe, are flowers. They have been well called "The Lyric Poetry of Creation." HORACE SMITH, the author of that grand poem, "Moral Ruins," and to my mind, one of the chiefest English poets, in his charming "Hymn to the Flowers," calls them "day stars," "matin worshippers," "living preachers," "floral apostles," "ephemeral sages," and concludes with the enthusiastic declaration—

"Were I, O God! in churchless lands remaining,
Far from all teachers, and from all divines,
My soul would find in flowers of thy ordaining,
Priests, sermons, shrines!"

Poets of all times have sung of flowers; and MARY HOWITT'S pious interpretation of their mission and teaching, how often soever quoted, never loses its charm to our ears, especially the lines—

"Our outward life requires them not;
Then wherefore had they birth?
To minister delight to man,
To beautify the earth;
To comfort man—to whisper hope,
Whene'er his faith is dim,
For he that careth for the flowers,
Will much more care fore him."

Truly, our heavenly Father and the blessed angels,—with all reverence be it said, must be lovers of flowers; for they are scattered by the divine bounty, with lavish hand, over field and meadow, on mountain and in valley. They nod to us from the tall trees, they open their starry eyes by the side of the dancing, musical streamlet, and smile serenely on us from the bosom of the placid lake. They are the acme and perfection of natural beauty. They give the finishing touch to nature. They refine and complete the beauty of earth's brightest, fairest scenes. They are to rocks and fields, woods and trees, what the flushing cheek, the ruddy lip, the radiant flashing eye, are to a lovely woman or a handsome man. And flowers, like human beings, grow more resplendently beautiful, more

exquisitely fair and perfect, by continual culture. Indeed, the finest, choicest flowers are the very result of civilization, cultivation, and refinement, and preach a continual lesson to our race, of the wonderful and transforming influence of a fine culture and perfect training. The Rose, with form of beauty and soul of perfume,—the brilliant and long illustrious Tulip,—that lively, sparkling little pet, the Verbena, and the stately, gorgeous Dahlia, are all creations of civilization and high culture. What a change, from the straggling bramble, with insignificant blossoms, to the protean queen of flowers,—with full blooms of every various tint and fragrant odor; or from the coarse and single Mexican flower, with its scanty petals of dull purple, to the splendid, full, round, quilled, cupped Dahlia, with every variety of shading, streaking, and tinting and coloring—*except blue*. And I should take delight in the Dahlia for this, if for no other reason, that it is a glowing and exquisite history, as well as a persuasive exhortation of the importance and value of high, true culture. And we should be thankful for any work that treats lucidly on the subject of flowers,—and especially for a writer, that without any pretence of mere technical science, makes an intelligible, practical book—like the one before us—for popular use, that can aid us in the pursuit of this most elevating and refining art—by selecting for us a good assortment of shrubbery, as well as of annuals and perennials, explaining simply their habits and wants, and showing us how to cultivate them. And here, a word or two now, at the opening of the season, may not be amiss on the subject of—

Flower Beds and Flower Borders.—In all cases, where possible, I prefer borders to beds; it is so difficult to relieve the latter from an air of stiffness, primness and artificiality, that reminds one of the old fashioned, Frenchified, geometric school of gardening. Again: the paths and avenues on which the boders touch, should never be straight or angular. In the early days of science it was said, that nature abhorred a vacuum; but it is always true, that nature abhors straight lines and angles, and delights in curves; and so does the lover of the beautiful, and every horticulturist of true taste. See to it, then, if you would "gratify both soul and sense," that you make your avenues and walks and paths, curvilinear. A flower border is most beautiful when stealing out and sloping down to the avenue, from luxriant groups of trees and shrubbery, that are verdant down to the very ground. If these are wanting, low evergreens, or a deep green hedge, or at any rate, a *back ground* of verdure—with the tall flowers set off against it, has a most beautiful and charming effect. These tall flowers at the back of the borders should be Yuccas, Spireas, as, Lobelia fulgens, Campanulas in variety, Foxgloves, Gladiolii, Bee Larkspur, L. sinensis, Hollyhocks, and all such plants as send up tall and brilliant spikes of flowers, from a pyramid of leaves against the back ground of shrubbery. Mingling in with these, there should be light frames for the best climbers, such as the Calystegia pubescens, Lobb's pretty new Nasturtium, pink, white, and purple, Maurandias, Eternal and Sweet Peas, Thunbergias, Cypress Vine, and Canary Bird flower, (Tropœolum peregrinum.) Then should come the flowers of middle height and bright colors,—and these should gradually slope off into masses of Petunias, Portulaccas, Verbenas, Convolvulus minor, Calystegias, Scarlet Geraniums, &c., &c. Indeed, a temporary or late flower garden, can be rapidly improved with nothing but Fever-fews, Scarlet Geraniums, Petunias and Verbenas, by properly arranging and grouping the colors—and marking the distances with a bunch of Gladiolii or Roses. *Beds* of Roses, Verbenas and Mignonette, with a climber or Dahlia, if you please, in the center, in a round, oval or curvilinear figure, are admissible, cut out of the turf and embroidered upon a lawn. Pœonias and Dahlias should not, I think, be in a border, but should set alone among shrubbery, between evergreens, &c. One word on *grouping* according to forms and colors, as well as heights, and I have done.

The care to bring complementary colors together, has sometimes a fine effect—as in case of vivid orange-scarlet, and azure blue—the scarlet of Smith's Geranium, Scarlet Lychnis, or Defiance Verbena, with the blue of Salvia patens, Camellia Celestis, and the blue Nemophila. White and scarlet, orange with purple, yellow with blue, pink with white or deep purple, look well. Next your Scarlet Geraniums place a knot of Camellias, or pin down a blue Salvia. In another place, or on the other side of the Geranium, set double white Feverfews. Place a mass of blue Nemophila or of white Verbenas, beside Ransom's Defiance, (I am talking of Verbenas)—put Eclipse, Brill's Rosy or Beauty Supreme, with Frost's purple. St. Margaret with Othello, or the common purple Verbena. Star masses of new blue Convolvulus; next Escholtzia, (Chryse's,) and masses of Calystegia, set with masses of the new Plumbago larpentæ. Flowers should also be grouped in the borders according to their forms. Double white Feverfews, and purple Senecias, together. Malope, purple and white Lavateras, and African (annual) Hibiscus, together. Scarlet and orange colored Cacalia, Mexican Ageratum and white Eupatorium, in a group. It is *everything* to a flower garden, to arrange and *group* flowers according to heights, forms and colors, so that in place of the chaotic, hap-hazard, higgledy-piggledy style so common, the order, grace, and beauty of true divine Art, should rule and harmonise all things in it.

Dedham, Mass., March 17.

Domestic Notices.

Frontispiece—Rural Church.—Pursuing our intention of occasionally presenting sketches and hints for the improvement of our county church architecture, we give, this month. a view from an English Journal, of the new district church at Bracknell. We think no one can become familiar with the forms and outlines of the Gothic style as applied to church architecture, even in this comparatively simple manner, without being impressed with its superiority, both in point of significance and beauty, over the Grecian structures, still so commonly built for churches in many parts of the country.

Hardy Trees.—It is interesting to note the hardiness of various trees or shrubs not yet well known in the country. Though the past winter has not been a cold one in the northern states, yet the alternation of heat and cold have been so frequent as to affect many half hardy plants quite as much as a much lower state of the atmosphere usually does.

Cryptomeria japonica and *Taxodium sempervirens*, two new evergreens which were expected to prove decided acquisitions to our pleasure ground, do not, we are sorry to find, after two years trial, prove to be really hardy. The young shoots of the latter have either been quite killed by the frost—even when the plants have been covered; while the former, though not absolutely killed, becomes so browned and enfeebled that it can never be looked upon as a hardy tree north of Philadelphia. In the climate of Baltimore and southward, we have no doubt that both these trees will prove quite hardy.

Pinus excelsa, abies Smithiana, Picea cephalonica, Thuya filiformis, prove perfectly hardy in all exposures. The Deodar cedar, we are glad to mention, is quite hardy, and flourishes admirably in this climate, and will soon be extensively planted as one of the most beautiful of evergreens. We have still some doubts about the hardiness of the *Araucaria* or Chili pine. It certainly stands the winter—but still it seems enfeebled by it. This tree seems to demand a soil composed of three-fourths *sand* as a necessity. In rich, damp, loamy soils it neither grows nor bears the winters—even about Philadelphia—while in a somewhat shaded position and in very sandy soil, it thrives as far north as the Hudson Highlands. Whether it will take to our climate as it does to that of England—where it is certainly the most striking

of all evergreen trees—remains yet to be proved.

One of the handsomest of all the new evergreens, is the new Yew-like tree from Florida—*Torreya taxifolia.* Its rich, dark green foliage, its extremely elegant habit and rapid growth, recommend it particularly to amateurs. It has borne the past three winters about New-York and in this neighborhood quite without protection.

Rhododendron catawbiense and its many beautiful varieties, sent out here from English nurseries, prove much better adapted to hardy culture than even the *R. maximum* of our native woods. They should find a place in every good garden—and should be planted in a deep shady border composed of sand and leaf mould.

Wiegela rosea, Spirea prunifolia pleno, Buddlea, Lindleyana and *Forsythia viridissima*—three of the finest new deciduous shrubs lately introduced, prove perfectly hardy in all situations. The evergreen *Euonymus* and its two varieties with gold and silver striped foliage, are quite hardy about New-York, and seem particularly well suited for town gardens, where verdure in shrubs during winter is desirable.

The Camellia, hardy at Baltimore.—Passing through Baltimore a few days since, we made a hasty visit to the country-seat of Dr. Edmundson, a mile from the city, to see Camellias growing and blooming in the open air, (see Hort. vol. iii. p. 417.) The sight was one well worth seeing. In the rear of Dr. E.'s house are fine groups of oak trees, standing in the lawn. Under the partial shelter of these trees, we saw three large clumps or beds of Camellias, containing, perhaps, a couple of hundred plants. They were growing in a dry, light, gravelly loam, where they have now flourished for some five or six years, and have grown to various heights, from 2 to 6 feet. They receive no protection whatever, in winter, except a covering of three or four inches of the oak leaves thrown over the surface of the soil in autumn, to keep the severe frosts from the roots. The plants were in fine condition, and when we saw them, (April 17,) they were nearly in full bloom—at the same time with the fruit trees in the surrounding orchards, and apparently almost as hardy.

This will very much surprise those who look upon the Camellia as a tender green-house plant—but not those who are familliar with the fact, that in that part of China where the Camellia grows naturally, the rivers are occasionsionally frozen.

Dr. Edmundson found that the finer double sorts taken from the green-house, were not sufficiently hardy to stand without protection—partly, no doubt, from their having been rendered more tender than they were naturally, by the constant high temperature of the green-house. He then took *seedling* plants, and planted them, when only a foot high, in the open borders, as we have described. These proved perfectly hardy—and have been exposed once to a temperature of zero, or 32° below the freezing point.

In Carolina, nearly all the double Camellias are hardy enough to be treated as garden shrubs. But the success of Dr. Edmundson proves to our minds, that the Camellia might be acclimated as far north as New-York—not by means of sheltering green-house sorts, but by raising seedlings. His plants produce seeds in abundance, we understand, and no doubt seedlings raised from them would give us plants perfectly naturalised to many parts of the northern states.

California Seeds.—Every botanical reader is aware of the riches of the Flora of our new territory on the Pacific, and a project was started a year ago, to form a subscription to send out a collector to procure rare plants and seeds in California and Oregon,—which, however, was never carried out. We notice, however, that Messrs. Thorburn & Co., offer for sale (at their warehouse, 15 John-street, N. Y.) a collection of seeds of 47 different species of the most attractive and showy trees, shrubs, and flowering plants of California, carefully labeled, and put up in tin boxes. These seeds, we are informed, have just been received from California, where a collector of experience has devoted a season to the exploration of the country, and their collection and preservation. Among them we notice the "Nut Pine," (*Pinus monophyllus,*) a new evergreen oak, several species of Spiræ, Philadelphus, &c., not hitherto known or described. Amateurs will do well to make a sowing, in the hope of adding something new to their grounds.

Curculio.—Your correspondent Wm. Hopkins, exhibits much judgment in his remarks on the curculio. What good will your plum and poultry yards produce, unless all your plum growers in the neighborhood, pursue the same course, as you all agree the insect knows how to use its wings? What good can result from lime, salt or tobacco, when the young insect glories in possessing them? All I can say, is, that in 20 years, I have not lost a crop from the curculio, from more than 30 trees, in a *brick pavement*, round my house. From trees in the garden, I have had a crop for two years only. I see it stated, east, that where a part of the branches extended over a stream of water, no plums were touched by the curculio, but where over the ground, all were destroyed. The reason I assign is this. The *instinct* of the insect, teaches it not to deposit its egg over a pavement, as the young, when it falls to the ground, cannot get thro' the pavement, to obtain winter quarters. The insect is timid, and not fond of congregating where persons are constantly passing, or hogs or poultry constantly under the trees. It is true, the hogs and poultry may destroy all the eggs in your plums, but you can generally depend on the liberality of your neighbors, to give you an abundant supply when your fruit is growing. Yours truly, N. Longworth. *Cincinnati, O.*

The Nectarine a Smooth Peach—A. J. Downing, Esq.—Dear sir: Having read much in the Horticulturist, *pro et con*, concerning a peach stone producing a nectarine and vice versa, I thought a circumstance that transpired under my own observation the past season, might not prove uninteresting to the readers of the Horticulturist.

Some five or six years since, I planted a few thousand peach stones to raise stocks from; but in budding them, quite a number failed to take the bud, and were consequently headed down the next spring, with the exception of the first in each row, which were left as markers; one of which produced the past season, a crop of peaches and *nectarines*. The peaches were of smallish size, good flavor, and ripened a few days later than the Early York.

The nectarines were of small size, well colored, and of fine flavor. Being unwilling to trust to the evidence of my own senses in this matter, I preserved a specimen of the nectarines till the fall show of our (Niagara county) Horticultural Society, when I presented it to some of our best judges of fruit, who unhesitatingly pronounced it a *bona fide* nectarine. This tree never has been grafted or budded. I did not find them, the fruit, on the ground, but picked them off the tree myself. These are facts, and (to me at least,) conclusive and self-convincing, which cannot be controverted.

If you think the above worthy of insertion in the Horticulturist, it is at your disposal.

I have taken the Horticulturist ever since its commencement; it is my hand-book on all subjects of which it treats. I remain yours most sincerely, Jas. Culver. *Royalton, March* 10.

Foreign Vines in North Carolina.—A. J. Downing, Esq.—Sir: I am much obliged to you for all you are pleased to say on the cultivation of the *vine* in general, and especially with respect to the universal failure, in this country, in cultivating the European varieties in the open air; though I have been acquainted with those same prevailing opinions for a great many years. I can add to the authorities cited by you, that of the late President Thomas Jefferson, who stated to me so far back as 1819, his utter failure, and his inability to succeed in cultivating the European varieties at Monticello. Professor Caldwell, at Chapel Hill, N. C., has also failed. Many more could be added, such as Michaux's (the botanist,) experiment in South Carolina, which equally proved a failure. Herbemont in South, and Laspeyre in North Carolina, met only partial success, so far as I can learn. Still, so far back as 1821 and 1822, I succeeded in cultivating them in Fauquier county, Virginia, on the farm of Dr. R. Peyton. I understand that Judge John Scott has had since, great success in the same county.

Wherever I have been, I have found that the *idea* you entertain, about European varieties not succeeding in "*this country*," in the open air, is every where prevailing. "The thing is impossible," you say; certainly in the state of New-York. Though Mr. N. Longworth did not succeed, as he did me the honor to inform me at Cincinnati, still that is no reason for my trial not succeeding 6° of latitude farther south.

I may here state that the fig tree and almond tree, do well with us in the open air, and that my Muscat, de Frontignan and White Chasse-

las, ripened in the *open field*, by the 10th of last August, i. e., in 145 days, and that they were as good as any I have ever eaten in Corsica, celebrated for its climate for the culture of the vine. It must be remarked that this early degree of perfect maturity, was produced by vines that eight months previously were not as yet planted in the sand hills of North Carolina, but were on the ocean, on their way to this, their *now* adopted country.

In a letter written more than 17 months ago, to Mr. Thomas Ewbank, at his own request, which will soon be published in the Patent Office Report, you will see, sir, that I do not differ with you as to the importance of the method of seedlings, in order to obtain new varieties best suited to this country. It may be gratifying to you to know that your hint of resorting to seedlings has long been anticipated by me.

As to the grape-vines being exhausted by long cultivation or neglect, the experience of France Vigninicole abundantly proves it. Let us see, for instance, what Le Comte de Gasparin says. "We must provide for this state of things, (old age,) which threatens its future fecundity. There exists two systems. The first is to root up the vine, which tends to its decripitude," &c; and again: "In about 15 years, more or less, the vintage of the vineyard diminishes, and from this epoch, the weakness which at first was but little perceptible, continues, and ends by becoming considerable. A vineyard which at first produced 18 hectoliters, with the same care and manures will only yield 9 or 10 when the vineyard will be 30 or 40 years old." Vol. iv, p. 674.

I cannot anticipate, and will not now state what are my future expectations. I have planted European grape-vines in the open air, in the hope to succeed, though you say it is in vain. "Time alone can determine," I say. I shall take great pleasure in informing you of the results of my trial.

Your recommendation with respect to the cultivation of the European vines in northern latitudes, is perfectly right, but does not hold good for my locality, in latitude 34°. The isothermal line fortunately places me nearly on the same footing with the south of France. That Mr. Loubat and Mr. N. Longworth, should not have succeeded in the field culture of European varieties, is perfectly natural, and nothing else could be expected, unless they had tried the Rhenish kinds. On the contrary, the fig and almond trees do well with us. This is, sir, a pretty good index of climate, and it being congenial to them and the cactus, I hold, by parity of reasoning, that the most delicate vines will continue to flourish with us. I am led to suppose, also, that in the same degree as the quince stock, for instance, modifies its graft, so will our luxurious, hardy native vines, affect the European varieties.. *Nous verrons.*

I wish that such a work as the *Ampelographie*, by Comte Odart, should be more generally known in this country. Comte de Gasparin, in speaking of this work, in his "*Cours d'Agriculture*," says: "We have adopted the nomenclature of Comte Odart, whose Ampelographie is the first work which presents, in a manner somewhat general, the character and synonyms of the grape-vines. This work is the fruit of long years of research and experience."

Such are the men I love to imitate, and quote for my authority. With great consideration, Joseph Togno, M. D. *Diccoteaux, near Wilmington, N. C., January*, 1851.

P. S. Comte Odart, in his classification of American grape-vines, mentions only three, namely: the Skou-per-nong, (the Indian name, meaning *Sweet-water*,) the Catawba and Isabella, (Laspeyre)—all three, be it said, *en passant*, native of North Carolina. This is, at least, a *slight* proof that this is the region of the grape par excellence.

Tan-bark for Mulching.—Having been a constant reader for the last four years, of the best publication on horticulture in the U. S., the Horticulturist and Journal of Rural Art and Rural Taste, and having received more knowledge and real pleasure in the perusal than in reading any other work, I take the liberty to ask a few questions. Last fall I set $250 worth of pear trees. I am satisfied that mulching is one of the greatest securities for the life of new set trees. Will you tell me if there is danger in mulching with refuse tan-bark from the tan-yard? If not, how thick ought it to be round the tree? I have read your articles recommending tan-bark for grapes, but I have not applied it to *young trees* without your advice.

Last fall soon after the fruit dropped, I removed three pear trees from ten inches to eighteen inches in diameter; it took sixteen cattle to move the large one. My neighbors said it could not be done, and now they are moved they say they will not live. I have already proved them *half wrong*, and this summer I intend proving the *other half*. If they live I will tell you; if they die, I shall keep perfectly quiet about it, and when I want to move big trees again, wait till winter and freeze a ball of earth round the roots. I much regret the silence of some of your old correspondents. Has some GIL BLAS told JEFFRIES he begins to flag, or what is the matter? I intend writing a series of articles against the selfishness of mankind in general and JEFFERIES in particular, if we dont hear from him in the next number. Respectfully yours, A. A. F. *Granite Lodge, Brookline, Mass., March* 17, 1851.

[Old tan-bark—that has been exposed for a year to the weather is a good *mulcher*, and will do your trees no harm. Bark fresh from the tan-vats *may*. We hope JEFFRIES will feel himself called out again by the force of public opinion. ED.] ———

EDUCATION OF GARDENERS.—Your judicious remarks respecting experimental gardens in the April number of last year, are so good that you deserve the thanks of every gardener in the United States, who wishes to see his profession advance from the miserable position in which it now generally stands. If as has been before said, "Man begins to build stately sooner than garden finely," as if gardening were the greater perfection, surely America with all its grandeur must be behind in the march in this respect. I do not deny that there are many places which will rank with some of the best kept up gardens on the other side the Atlantic, but generally speaking this is not the case. Yet there is sufficient taste and desire on the part of those who can afford to support such establishments. We find most of our wealthy citizens keeping a country house and retiring from the crowded cities when Flora puts on her gay attire. We see them wishing to have gardens, and those few who really get them enjoying their beauties. A further proof is in the universal love of flowers and the high prices that are frequently paid for them. Many expend thousands of dollars in laying out their grounds, but which I am sorry to say is too often squandered by men in whom they have placed confidence, who have no ability for such things, who pitch, here and there, a stick of a tree in a hole not large enough to bury a cat, as accidentally as if they had fallen from the clouds, and think they have done wonders, and who instead of producing beauty and grace, and thus giving satisfaction, are at last cut short by the disgust of their employers. If there is desire for such things, it cannot be denied that the universal wish to excel, will prompt American gentlemen to have as good gardens as most Europeans, providing they can get enough of the same class of gardeners as are there found in the best conducted places. Mr. QUIN's comparison (in the July number) between a store-sweeper's wages and those of a gardener, are ill-timed and out of place. Indeed it seems to me his whole argument will hardly bear the test of examination. It is hoped that the eruption may be quenched by a little common sense.

The profession is held back by the horde of *pretenders* who swarm all over the country, who have no ability but in their impudence, who can do every thing perfect in the porter house, and everything imperfectly in the garden, and who from their numbers, their presumption and their arrogance, make the gardener's calling a derision and a mockery. How are gardeners to expect, (except in a few instances) better remuneration than "hewers of wood and drawers of water," while the present state of things exists. It is the bounden duty of every true gardener to set a decided stand against such men, and to hold out the right hand of fellowship to any one who has public influence, and respond with the kindest feelings to him who in his public capacity, endeavors to raise gardening from its present forlorn condition, up to that position which it is entitled to hold. Such societies for the practical education of gardeners as you advocate, would do much towards bringing about so desirable a consummation. They would be the means of testing the abilities of the different men who would come within their sphere, and depend upon it that sphere would be a very extended one if fully carried out, sufficiently so to remodel gardening throughout the country. Only let

the principal large cities have each its horticultural society's garden, and let there be in each a department for general culture. Let it be known to gardeners both here and abroad that they would be employed, and their abilities tested by a scientific and experienced director, whose recommendation could be relied on, and there would be no lack of good and talented men applying for admission. Such societies would be a credit to the country. They would be supported at very little cost; in fact they might be made to be paying concerns, and gardeners abroad—*real gardeners*—not wheelbarrow trundlers—would know that there would be something in the way of an asylum for them to come to, and would be induced thereby to come over in greater numbers, when the host of pretenders would fall back before the face of experience, and fill only the situations of the oppressor and the penurious, and such places would in their turn become a laughing stock to all men of good taste. I have had some experience in the working of such societies in England, and can assert with confidence that they have done more to elevate gardening in that country than anything else. They have been the means during the last twenty years of making English horticulture a model for the world, of stimulating skill and raising a higher standard of perfection. They have also been the means of attracting the attention of spirited observing and intelligent young men, who thereby have been induced to learn the profession, seeing in it something to occupy a talented mind. Plenty of such young men are now languishing in the nursery establishments abroad at low wages, and little prospect before them. These would be easily induced to come over here if they knew there were any chance of bettering their condition, and employing their talent, but in the present position they are ignorant of the true state of gardening here, and those who are here and know how they would be situated on landing do not like to encourage them to come out. Establish such societies as the above; let it be known that there are such institutes where the *educated gardener* can find a resting place without having to succumb to the degrading position (perhaps for years because he has not the pretender's effrontry) of doing all kinds of conveniences for every domectic about a gentleman's back door, and wages in the first instance will be no object, and although employers should have to pay a little more for the services of such men, they will generally and eventually be the gainers to a large extent. Wishing you every success in your advocacy of the true interests of good gardeners, I am yours most respectfully, Wm. Chorlton, Gardener to J. C. Greene, Esq. *Staten Island, March* 4, 1851.

Grapes and Strawberries.—I am gratified to learn that the Diana grape is of good quality south. The fruit in Boston is far inferior to the Catawba with us. I doubt not it will be improved here. I have several vines that will fruit this season.

Your correspondent errs in supposing a cutting from a grape-vine, perfect in male and female organs, can become barren. I would sooner believe in mesmerism than this. I have raised from cuttings, 300,000 bearing plants, and never a non-bearer. A cutting of a defective plant has got there by mistake. You certainly err in saying the Scuppernong of North Carolina is the only native grape that is not perfect in both male and female organs. In our woods, I believe the greater portion of our wild grapes will be found defective in female organs, and barren. I have had the wild seedlings, (the seed I presume dropped by birds,) generally of this character. You certainly err, also, in saying, that in England no attention has been paid to the sexes of the strawberry plant. The strawberries they usually cultivate, are hermaphrodite, and are chiefly used for forcing. In the open ground, with us, their large fruited ones will not average a quarter of a crop of perfect fruit. [Our correspondent has not seen the crops of British Queen grown in England, or he would not hold this opinion. Ed.] Where forced, the pistils are better developed, and bear more fruit. This is the character of their boasted variety, Keen's Seedling. But Mr. Keen himself, discovered that there were varieties wholly defective in the male organ. He says, in one of his letters to the London Horticultural Society, published in their Transactions, that he found one of his beds in forcing, though full of blossoms, bore no fruit. He examined the blossoms, and found no perfect male organs. He went to a bed perfect in sta-

mens, and removed a few plants to the frames, and every blossom was impregnated and bore a perfect fruit. I imported this variety near 30 years since, and still have it, and cultivate it largely. As soon as the character of the strawberry plant is settled east, the Early Scarlet will only be cultivated as an impregnator. I will present Mr. Hogg a silver cup of the value of $100, as soon as he will produce *half a crop* of fruit from Hovey's justly celebrated seedling, or the English Methven Scarlet, if separated from all others. Neither of them will bear a perfect berry.* The same is true of Burr's highly flavored New Pine. Mr. Hovey and Mr. Burr both know the character of their seedlings, and will endorse what I say. It is a mistake to say the Catawba is our only wine grape. I believe the wine from the Missouri and Herbemont, will command a higher price than the dry Catawba wine. I this season paid double price for some of the latter, to one of my tenants. I offered another a higher price, which he declined. The former, with skillful manufacture, will equal Madeira. The latter, the Spanish Manzanilla, which it resembles in aroma and flavor. Yours resp'ly, N. Longwotrh. *Cincinnati, O., Feb.* 20, 1851.

Rabbits vs. Sulphur.—I have tried the experiment, [from the account in a former number,] the present winter, of placing small pieces of cloth dipped in melted *sulphur,* around a small nursery of fruit trees, at the distance of eight or ten feet from each other, and thus far it has been an impregnable barrier against the ravages of rabbits, which, in winters past, have been very destructive. C. P. *Granville, Ohio, Feb.* 10, 1851.

Horticultural Plough.—Mr. Wilkinson, of the Mt. Airy Agricultural Institute, has lately read an interesting paper before the Philadelphia agricultural association on ploughs and tillage. He exhibited a plan of a horticultural plough, which appears to us worthy of attention, and accompanied it with the following remarks:

To perfect the catalogue of ploughs for the various purposes, we need a plough which might properly be styled the *Horticultural Plough,* for the purpose of ploughing in orchards; one that will enable us to till close to the trees without exposing them to injury from being barked or galled by the whippletrees of the horse tackling, or the yoke of the oxen; and also to guard against injuring the teams, which often occurs in ploughing among trees, by bruising their hips against them. The same instrument, if properly constructed, will also be found very useful for ploughing along fences, whether the furrow is to be turned to or from the fence.

I have prepared a diagram of a form of plough, which I will submit to your inspection, that will be found an efficient improvement for all the above purposes, for which no manufacturer has ever succeeded in making one in the least adapted. In tilling the land near the thorn, or maclura hedge, this plough will enable us to till as close to them as we desire, without subjecting the teams to that painful laceration by the thorns, which is unavoidable in the use of a common plough in tillage. Any common plough, that is adapted to both fallow and sward land, and one that is considerably worn, will answer the purpose for a horticultural plough, when altered, by attaching to it the shifting beam—from the fact that it will be used but little, compared with other ploughs; hence a plough considerably worn, will answer as well as any.

Prairie Roses.—In June last I wrote an article on the prairie roses, 15 in number, which were in my possession, and with a few exceptions, in bloom. This article was published in the Syracuse Daily Journal, about the 4th of July, and copied into the August number of the Horticulturist. Some of the above, as before stated, were not fully expanded at the time, but the descriptions of such were copied from an article in Hovey's Magazine, (by the editor, see August No. 1847,) who then had eight in number in bloom, not including "Mrs. Hovey," but represented Mrs. Hovey as a pure or superb white rose, giving Mr. Joshua Pierce's description of it. After I had penned this article, my Mrs. Hovey bloomed very finely and was a *splendid blush.*

I see, however, that this rose is still advertised by Messrs. Hovey and others as a pure white, (see June No. of Hovey's Magazine, 1850) and I naturally came to the conclusion that I might have recieved the wrong rose, although I purchased it from the originator himself, (Mr. J. Pierce, of Washington.) When in Albany, last September, I asked Mr. James Wilson if he had Mrs. Hovey, (Prairie)—to which he replied affirmatively. Where did you get it? His reply was that a friend had ordered it from Miss Hovey & Co., of Boston, and he had re-received his plant from that friend. I then ob-

* We hope Mr. H. will accept this challenge. Ed.

served that I thought I had the wrong rose, but that Messrs. Hovey & Co.'s was right, as they still advertised it as a fine white, and I should be pleased to get a few buds of him; particularly so, as his rose was the same as Messrs. Hovey & Co's. Mr. Wilson looked me in the face, and very pointedly asked, "what color is yours?" I replied, a beautiful blush. "So is *mine*, and so is Messrs. Hovey & Co.'s," was his immediate answer.

Now, sir, presuming that I have the Prairie Rose Mrs. Hovey, correct, (as a number have also said it was a blush,) I wish to *correct* the statement I have put forth, and let it be publicly known, that the Prairie Rose, Mrs. Hovey, *is not* a *pure white*, (although a beautiful rose,) and if the Messrs. Hovey & Co. of Boston, or our friends Parsons & Co. of Flushing, or any other persons, have it "*a pure white*," as advertised or described, they will confer a very great favor on many of your readers, and particularly on your humble servant, by making it known, so that we may all possess ourselves of so valuable a rose. Can you, Mr. Editor, enlighten us any on this subject? A. Fahnestock. *Syracuse, Feb.* 15, 1851.

[We have this Prairie Rose called "Mrs. Hovey," received from Boston, and described as a white rose, which has bloomed two seasons, and is a deep blush rose—with no white about it. Ed.]

Horticultural Societies.

Pennsylvania.—The meeting for March was held on the 18th, when there was a fine display, comprising fine collections of flowering plants, from Jas. Ritchie, Jno. Lambert, Robert Buist, A. M. Eastwick, and J. D. Fulton—Cut flowers, Designs, Boquets, &c. Extensive collections of vegetables were shown by several gardeners. A vote of thanks was accorded to Charles Downing, for a copy of the "Architecture of Country Houses, by A. J. Downing."

The stated meeting for April was held on the 15th. The displays of plants and forced vegetables, were very fine, and furnished from six green-houses and a number of hot-beds. A few only of the most interesting plants from each contribution will be noticed. Among those from F. Lennig, were Gardenia Stanleyana, Franciscea hydrangeæ formis, and Columnea Scheideana, rare, and which attracted much attention. From Peter Mackenzie, were Silene rosea gracea and Crepis Drummondii of recent introduction, Pansies, Roses, and a beautiful display of Camellias; of the latter, a flower of his seedling of this year, named "Jenny Lind," a perfect gem, and was much admired. From Robert Buist, were specimens of a new plant from California in full bloom, allied to Arbutus, Pimelia spectabilis, Pelargonia and Hyacinths. From A. M. Eastwick, Callostylis aurantiacus? new, Azaleas, Cereas and Hyacinths. From Miss Gratz, Campanula nobilis, Azalea indica, rubra and Pelargonia. From James Ritchie, a choice selection of Roses and Pansies. Some beautiful specimens of cut Ranunculus were shown from James McGowan, Mt. Airy.

The only description of fruits shown, were Apples. By James Jackson, Quackertown, a seedling of merit. By Dr. Brinckle, from Chas. Carpenter, Kelly's Island, Lake Erie, "Carpenter's No. 2"—from A. Fahnestock, Syracuse, N. Y., "Northern Spy." By John Perkins, Monmouth and Newtown Pippins and Tewksbury winter blush.

The vegetable department consisted of three collections from Joseph Ripkat, Manayunck; from Miss Gratz, and from the garden of the Insane hospital.

A vote of thanks was accorded to Dr. Jno. M. Sharpless for the gift of a collection of Seeds from Cairo, Egypt. Tho. P. James, *Rec. Secretary.*

New-Jersey.—The N. J. Hort. Society have resolved to hold their next Annual Exhibition at Jersey City, on the 24th, 25th and 26th days of September, and have issued a liberal list of Premiums to be awarded at that time. A semi-annual meeting of the Society is to be held at Trenton, on the 20th of June.

HAMPTON COURT AVENUE.

Hort: June. 1851.

THE

Horticulturist,

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

A Few Words on our Progress in Building.

THE "Genius of Architecture," said THOMAS JEFFERSON, some fifty years ago, "has shed its malediction upon America." JEFFERSON, though the boldest of democrats, had a secret respect and admiration for the magnificent results of aristocratic institutions in the arts, and had so refined his taste in France, as to be shocked, past endurance, on his return home, with the raw and crude attempts at building in the republic.

No one, however, can accuse the Americans with apathy or want of interest in architecture, at the present moment. Within ten years past, the attention of great numbers has been turned to the improvement and embellishment of public and private edifices; many foreign architects have settled in the Union, numerous works—especially upon domestic architecture—have been issued from the press, and the whole community, in town and country, seem at the present moment to be afflicted with the building mania. The upper part of New-York, especially, has the air of some city of fine houses in all styles, rising from the earth as if by enchantment, while in the suburbs of Boston, rural cottages are springing up on all sides, as if the "Genius of Architecture" had sown, broadcast, the seeds of *ornee* cottages, and was in a fair way of having a fine harvest in that quarter.

There are many persons who are as discontented with this new hot-bed growth of architectural beauty, as JEFFERSON was with the earlier and ranker growth of deformity in his day. Some denounce "fancy houses,"—as they call everything but a solid square block—altogether. Others have become weary of "Gothic," (without perhaps, ever having really seen one good specimen of the style,) and suggest whether there be not something barbarous in a lancet window to a modern parlor; while the larger number go on building vigorously in the newest style they can find, determined to have something, if not better and more substantial than their neighbors, at least more extraordinary and uncommon.

There is still another class of our countrymen who put on a hypercritical air, and sit in judgment on the progress and development of the building taste in this country. They disdain everything foreign. They will have no Gothic mansions, Italian villas, or Swiss cottages. Nothing will go down with them but an entirely new "order," as they call it, and they berate all architectural writers, (we have come in for our share,) for presenting certain more or less meritorious modifications of such foreign styles. What they demand, with their brows lowered and their hands clenched, is an "American style of architecture!" As if an architecture sprung up like the after-growth in our forests, the natural and immediate consequence of clearing the soil. As if a people not even indigenous to the country, but wholly European colonists, or their descendants, a people who have neither a new language nor religion, who wear the fashions of Paris, and who in their highest education, hang upon the skirts of Greece and Rome, were likely to invent, (as if it were a new plough,) an original and altogether novel and satisfactory style of architecture.

A *little* learning we have been rightly told, is one of the articles to be labelled "dangerous." Our hypercritical friends prove the truth of the saying, by expecting what never did, and never will happen. An original style in architecture or any other of the arts, has never yet been invented or composed outright; but all have been modifications of previously existing modes of building. Late discoverers have proved that Grecian Architecture was only perfected in Greece—the models of their temples were found in older Egypt.* The Romans composed their finest structures out of the very ruins of public edifices brought from Greece, and the round arch had its rise from working with these fragments instead of masses of stone. The Gothic arch, the origin of which has been claimed as an invention of comparatively modern art, Mr. RUSKIN has proved to be of purely Arabic origin, in use in Asia long before Gothic architecture was known, and gradually introduced into Europe by architects from the East. And whoever studies Oriental art, will see the elements of Arabic architecture, the ground-work of the style, abounding in the ruins of Indian temples of the oldest date known on the globe.

It is thus, by a little research, that we find there has never been such a novelty as the invention of a positively new style in building. What are now known as the Grecian, Gothic, Roman and other styles, are only those local modifications of the styles of the older countries, from which the newer colony borrowed them, as the climate, habits of the people, and genius of the architects, *acting upon each other through a long series of years*, gradually developed into such styles. It is, therefore, as absurd for the critics to ask for the *American style of architecture*, as it was for the English friends of a Yankee of our acquaintance to request him, (after they were on quite familiar terms,) to do them the favor to put on his savage dress and talk a little American! This country is, indeed, too distinct in its institutions, and too vast in its territorial and social destinies, not to shape out for itself a great national type in character, manners and art; but the development of the finer and more intellectual traits of character are slower in a nation, than they are in a man, and only time can develope them healthily in either case.

* According to the last conclusions of the *savans*, Solomon's Temple was a pure model of Greek Architecture.

In the mean time, we are in the midst of what may be called the experimental stage of architectural taste. With the passion for novelty, and the feeling of independence that belong to this country, our people seem determined to *try everything*. A proprietor on the lower part of the Hudson, is building a stone castle, with all the towers clustered together, after the fashion of the old robber strong-holds on the Rhine. We trust he has no intention of levying toll on the railroad that runs six trains a day under his frowning battlements, or exacting booty from the river craft of all sizes forever floating by. A noted New-Yorker has erected a villa near Bridgeport, which looks like the minareted and domed residence of a Persian *Shah*—though its orientalism is rather put out of countenance by the prim and puritanical dwellings of the plain citizens within rifle shot of it. A citizen of fortune dies, and leaves a large sum to erect a "large plain building" for a school to educate orphan boys—which the building committee consider to mean a superb marble temple, like that of Jupiter Olympius; a foreigner liberally bequeaths his fortune to the foundation of an institution "for the diffusion of knowledge among men"—and the regents erect a college in the style of a Norman monastery—with a relish of the dark ages in it, the better to contrast with its avowed purpose of diffusing light. On all sides, in our large towns, we have churches built after Gothic models, and though highly fitting and beautiful as churches, i. e., edifices for purely devotional purposes—are quite useless as places to hear sermons in, because the preacher's voice is inaudible in at least one-half of the church. And everywhere in the older parts of the country, private fortunes are rapidly crystalizing into mansions, villas, country-houses and cottages, in all known styles supposed to be in any way suitable to the purposes of civilized habitations.

Without in the least desiring to apologise for the frequent violations of taste witnessed in all this fermentation of the popular feeling in architecture, we do not hesitate to say that we rejoice in it. It is a fermentation that shows clearly there is no apathy in the public mind, and we feel as much confidence as the vintner who walks through the wine cellar in full activity, that the froth of foreign affectations will work off, and the impurities of vulgar taste settle down, leaving us the pure spirit of a better national taste at last. Rome was not built in a day, and whoever would see a national architecture, must be patient till it has time to rise out of the old materials, under the influences of a new climate, our novel institutions and modified habits.

In domestic architecture, the difficulties that lie in the way of achieving a pure and correct taste, are, perhaps, greater than in civil or ecclesiastical edifices. There are so many private *fancies*, and personal vanities, which seek to manifest themselves in the house of the ambitious private citizen, and which are defended under the shield of that miserable falsehood, "there is no disputing about *tastes*." (If the proverb read *whims*, it would be gospel truth.) Hence we see numberless persons who set about building their own house without the aid of an architect, who would not think of being their own lawyer, though one profession demands as much study and capacity as the other; and it is not to this we object, for we hold that a man may often

build his own house and plead his own rights to justice satisfactorily—but it must be done in both instances, in the simplest and most straight-forward manner. If he attempts to go into the discussion of BLACKSTONE on the one hand, or the mysteries of VITRUVIUS and PUGIN on the other, he is sure to get speedily swamped, and commit all sorts of follies and extravagancies quite out of keeping with his natural character.

The two greatest trials to the architect of taste, who desires to see his country and age making a respectable figure in this branch of the arts, are to be found in that class of travelled smatterers in *virtu*, who have picked up here and there, in the tour from Liverpool to Rome, certain ill-assorted notions of art, which they wish combined in one sublime whole, in the shape of their own domicil; and that larger class, who ambitiously imitate in a small cottage, all that belongs to palaces, castles and buildings of princely dimensions.

The first class is confined to no country. Examples are to be found everywhere, and we do not know of a better hit at the folly of these *cognoscenti*, than in the following relation of experiences by one of the cleverest of English architectural critics:

"The architect is requested, perhaps, by a man of great wealth, nay, of established taste in some points, to make a design for a villa in a lovely situation. The future proprietor carries him up stairs to his study, to give him what he calls his 'ideas and materials,' and, in all probability, begins somewhat thus;—'This, sir, is a slight note; I made it on the spot; approach to Villa Reale, near Puzzuoli. Dancing nymphs, you perceive; cypresses, shell fountain. I think I should like something like this for the approach; classical you perceive, sir; elegant, graceful. Then, sir, this is a sketch by an American friend of mine; Whe-whaw-Kantamaraw's wigwam, king of the —— Cannibal Islands; I think he said, sir. Log, you observe; scalps, and boa constrictor skins; curious. Something like this, sir, would look neat, I think, for the front door; don't you? Then the lower windows, I'm not quite decided upon; but what would you say to Egyptian, sir? I think I should like my windows Egyptian, with hieroglyphics, sir; storks and coffins, and appropriate mouldings above; I brought some from Fountain's Abbey the other day. Look here, sir; angel's heads putting their tongues out, rolled up in cabbage leaves, with a dragon on each side riding on a broomstick, and the devil looking out from the mouth of an alligator, sir.* Odd, I think; interesting. Then the corners may be turned by octagonal towers, like the centre one in Kenilworth Castle; with Gothic doors, port-cullis and all, quite perfect; with cross slits for arrows, battlements for musketry, machiolations for boiling lead, and a room at the top for drying plums; and the conservatory at the bottom, sir, with Virginia creepers up the towers; door supported by sphinxes, holding scrapers in their fore paws, and having their tails prolonged into warm-water pipes, to keep the plants safe in winter, &c.'"

We have seen buildings in England, where such Bedlam suggestions of taste have not only been made, but accepted either wholly or partly by the architect, and where

* This grotesque device is actually carved on one of the groins of Roslin Castle, Scotland.

the result was, of course, both ludicrous and absurd. There is less dictation to architects in this country on one hand, and more independence of any class on the other, to bring such examples of architectural salmagundies into existence—though there are a few in the profession weak enough to prostitute their talents to any whim or caprice of the employer.

But by far the greater danger at the present moment lies in the inordinate *ambition* of the builders of ornamental cottages. Not contented with the simple and befitting decoration of the modest veranda, the bracketted roof, the latticed window, and the lovely accessories of vines and flowering shrubs, the builder of the *cottage ornee* in too many cases, attempts to engraft upon his simple story of a habitation, all the tropes and figures of architectural rhetoric which belong to the elaborate oratory of a palace or a temple.

We have made a point of enforcing the superior charm of simplicity—and the *realness* of the beauty which grows out of it, in our late work on COUNTRY HOUSES. We even went so far as to give a few examples of farm-houses studiously made simple and rural in character, though not without a certain beauty of expression befitting their locality, and the uses to which they were destined. But, judging from some criticisms on these farm-houses in one of the western papers, we believe it will not be an easy task to convince the future proprieters of farm-houses and rural cottages, that truthful simplicity is better than borrowed decorations, in their country homes. Our critic wonders why farmers should not be allowed to live in as handsome houses, (confounding mere decoration with beauty,) as any other class of our citizens, if they can afford it—and claims for them the use of the most ornamental architecture in their farm-houses. We have only to answer to this, that the simplest expression of beauty which grows out of a man's life, ranks higher for him than the most elaborate one borrowed from another's life or circumstances. We will add, by way of illustration, that there is no moral or political objection, that we know, to a farmer's wearing a general's uniform in his corn-fields, if he likes it better than plain clothes ; but to our mind, his costume—undoubtedly handsomer in the right place, would be both absurd and ugly—behind the harrow.

We are glad to find, however, that our feeling of the folly of this exaggerated pretension in cottage architecture, is gradually finding its expression in other channels of the public press—a sure sign that it will eventually take hold of public opinion. The following satire on the taste of the day in this over-loaded style of "carpenter's gothic," from the pen of one of the wittiest and cleverest of American poets, has lately appeared, (as part of a longer satire on another subject,) in one of our popular magazines. But it is too good to be lost sight of by our readers, and we recommend it to a second perusal. A thought or two upon its moral, as applied to the taste of the country, will help us on most essentially in this, our experimental age of architecture.

THE RURAL COT OF MR. KNOTT.

By Lowell.

My worthy friend, A. Gordon Knott,
From business snug withdrawn,
Was much contented with a lot
Which would contain a Tudor cot
'Twixt twelve feet square of garden-plot
And twelve feet more of lawn.

He had laid business on the shelf
To give his taste expansion,
And, since no man, retired with pelf,
The building mania can shun,
Knott being middle-aged himself,
Resolved to build, (unhappy elf!)
A mediæval mansion.

He called an architect in counsel;
"I want," said he, "a—you know what,
(You are a builder, I am Knott,)
A thing complete from chimney-pot
Down to the very groundsel;
Here's a half acre of good land;
Just have it nicely mapped and planned,
And make your workmen drive on;
Meadow there is, and upland too,
And I should like a water-view,
D' you think you could contrive one?
(Perhaps the pump and trough would do,
If painted a judicious blue?)
The woodland I've attended to;"
(He meant three pines stuck up askew,
Two dead ones and a live one.)
"A pocket-full of rocks 'twould take
To build a house of freestone,
But then it is not hard to make
What now-a-days is *the* stone;
The cunning painter in a trice
Your house's outside petrifies,
And people think it very gneiss
Without inquiring deeper;
My money never shall be thrown
Away on such a deal of stone,
When stone of deal is cheaper."

And so the greenest of antiques
Was reared for Knott to dwell in;
The architect worked hard for weeks
In venting all his private peaks
Upon the roof, whose crop of leaks
Had satisfied Fluellen.
Whatever anybody had
Out of the common, good or bad,
Knott had it all worked well in,
A don-jon keep where clothes might dry,
A porter's lodge that was a sty,
A campanile slim and high,
Too small to hang a bell in;
All up and down and here and there,
With Lord-knows-whats of round and square
Stuck on at random everywhere;
It was a house to make one stare,
All corners and all gables;
Like dogs let loose upon a bear,
Ten emulous styles *staboyed* with care,
The whole among them seemed to bear,
And all the oddities to spare,
Were set upon the stables.

Knott was delighted with a pile
Approved by fashion's leaders;
(Only he made the builder smile,
By asking, every little while,
Why that was called the Twodoor style,
Which certainly had *three* doors?)
Yet better for this luckless man
If he had put a downright ban
Upon the thing *in limine;*
For, though to quit affairs his plan,
Ere many days, poor Knott began
Perforce accepting draughts that ran
All ways—except up chimney;
The house, though painted stone to mock,
With nice white lines round every block,
Some trepidation stood in,
When tempests (with petrific shock,
So to speak) made it really rock,
Though not a whit less wooden;
And painted stone, howe'er well done,
Will not take in the prodigal sun
Whose beams are never quite at one
With our terrestrial lumber;
So the wood shrank around the knots,
And gaped in disconcerting spots,
And there were lots of dots and rots
And crannies without number,
Where through, as you may well presume,
The wind, like water through a flume,
Came rushing in ecstatic,
Leaving in all three floors, no room
That was not a rheumatic;
And what, with points and squares and rounds,
Grown shaky on their poises,
The house at night was full of pounds,
Thumps, bumps, creaks, scratchings, raps, — till —
"zounds,"
Cried Knott, "this goes beyond all bounds,
I do not deal in tongues and sounds,
Nor have I let my house and grounds,
To a family of Noyeses!"

A LITTLE TALK IN THE APPLE ORCHARD.

BY HENRY F. FRENCH, EXETER, N. H.

[The following pithy, spirited, and practical article—one of the best ever sent us, will commend itself to every reader. Ed.]

The inquiry is frequently made, "At what season is it best to prune apple trees?" Now if we take down Cobbett's edition of "Forsyth on Fruit Trees," we read at page 48 as follows—"The best time to prune apple trees, is *in the month of April or May.*" If, then, we open Kenrick's "New American Orchardist," at page 107 we read thus—"The most suitable season for pruning (apple trees,) is *that interval between the time when the frost is out of the ground in spring, and the opening of the leaf.*" Cole, in his "Fruit Book," at page 57, says—"Moderate pruning should be done in *June, July, or August*, though it will answer very well till December. If trees are pruned in July, August, or September, the wood will become hard, sound and well seasoned—we should prefer October, November, or even December, to *the spring, which is the worst season.*" The author of "the Fruits and Fruit Trees of America," at page 31, (11th edition,) sums up the matter thus—"There are advantages and disadvantages attending all seasons of pruning, but our own experience has led us to believe, that practically, *a fortnight before midsummer* is by far the best season on the whole, for pruning in the northern and middle states."

I have heard by tradition, the advice of a clergyman of a former generation, famous alike for worldly and spiritual knowledge, to a hearer, who asked him at what time he would advise to prune apple trees—"*When your tools are sharp,*" was the reply—a reply, by the way, which seems to embody the wisdom of *all* modern writers on the subject.

All the writers of books, and most of the growers of fruit, have some decided opinion on this point, on which they are ready to peril "life and limb," both of their trees and themselves, if necessary, and although most of the late authors teach otherwise, the general practice in this section of the country, is still to prune apple trees in March and April, before the bursting of the buds. And it will require strong and obvious reasons to change the custom among our farmers.

Pruning an old orchard, which has been neglected for ten or a dozen years, and especially one that has been recently grafted upon full grown trees, is a pretty serious matter, requiring time and a strong arm, as well as skill. They who tell us that trees properly trained, require very little pruning, and that it may all be done the first week in June, no doubt speak truly, but not very satisfactorily to us, of the northern latitudes.

We have snow and a frozen soil, in New-Hampshire, until April. During that month, much of our land is unfit for the plow, and "planting time," for our corn and potatoes, our principal hoed crops—is from the 10th of May till the 10th of June. From the end of planting, all hands are hoeing until "haying time," which commences with July, and continues through that month and part of the next, so that there is no leisure for us except in early spring, or in autumn.

It is at this season, while waiting for the coming on of the "spring's work," when the blue bird and robin are heard welcoming the first bright, still days of the season, that you may see the farmer with his boys, both great and small, perched upon the old trees of the orchard, pruning and grafting. Many a boy of twelve or fourteen have I seen engaged in this employment, and not unfrequently, a lad of eighteen or twenty, makes it his business

for several weeks, to go from town to town, with his grafting tools, and an assortment of scions of his own selecting, setting them for two cents each, and warranting them to live, and waiting for his pay till the following year, when he again goes over his route. This, you will say, is entrusting the business to rather unskillful hands. And so, indeed, it is, but it is far better so than not done at all, for by similar means, have some sections of our state been filled with the best varieties of fruit. To be sure, one who trusts to another's selection of varieties, finds himself egregiously deceived sometimes, when his trees come to bearing, for every man has some favorite kind of apple, which he persists, against light and knowledge, in regarding as superior to everything else in the world. It may be some discovery of his own, of some fruit of about the size of a pumpkin, and of similar flavor, or more likely it is the product of some famous old tree, that stands by the back door of the old homestead, where he used to play with his brothers and sisters and the old house-dog, and eat green apples when a boy. I have a picture of just such a tree in my memory, of which the apples were sweeter than any that grow now-a-days. I always forget to set scions which are recommended as coming from anybody's father's or grandfather's place; and there are reasons less complimentary to poor humanity, for not trusting to itinerant performers in these branches.

I may as well confess to having fallen in with the practice of my neighborhood, of pruning in early spring, at the time of grafting. KENRICK and FORSYTH were considered good authority, formerly, and although I admit that my opinion has been at times much shaken by more modern writers, I have, from personal observation, seen no reason to change my practice.

The reasons of *convenience* with us, are very strong for pruning in April, rather than in summer. Besides the fact that it is comparatively a leisure season, are other reasons for preferring the spring. At that time *the bark do s not slip*, and there is less danger then than later, of injury to the tree by standing on the limbs, as well as by the starting of the bark where the branch is cut off.

With us, nobody pretends to graft after the bark begins to slip, and it requires more care and skill than can readily be *purchased*, to remove limbs of large size without leaving bad wounds, from the causes referred to. I am fully aware that *we* who read the Horticulturist, know how to amputate limbs scientifically, and that we should, by no means, be guilty of placing a lawless foot upon any tree, to its hurt; but the fact is that many of the orchards are owned by farmers, who do not wear velvet slippers, especially when at work, and one "finds no rest for the sole of his foot" on a tree, without some substantial protection against knots and the rough bark, so that it must and does happen, although against all propriety, that many thick boots go upon our trees, and many coarse saws are used in pruning, and a great many limbs are taken off by persons too unskilful or indolent to *cut on the under side first*, to prevent splitting or stripping off the bark.

Again, spring pruning is most convenient, because in summer we usually have our orchard land under cultivation, and by pruning then, the crops must be much injured by trampling them down, and by the branches thrown upon them. I am perfectly aware of the answer which will be at once given by the merely theoretical man, that orchards should by no means be cultivated for other crops than apples—and I reply, that although, perhaps trees may grow faster with no vegetation about them, yet they will grow fast enough for the first ten years, upon ground properly cultivated, with any hoed crop covering all the ground, except a small space round each tree. And besides, there is great difficulty in keeping land fallow and free from weeds, for successive years, and lastly, human nature has always had a strange propensity to enjoy the present at the expense of the

future; and we shall have to write a good while longer, before men will be persuaded to plant for the future, at such present sacrifice as is involved in surrendering the entire income of their best and most convenient land, even for so long a period as is required in bringing an orchard into bearing.

The objections to early spring pruning are, that the wounds then made do not heal so readily as when the tree is in full process of growth. This is, *perhaps*, true, and may be admitted as a fact, without being practically entitled to much weight, because I think with us, vigorous trees seldom suffer any delay or failure in the healing of wounds made in pruning, at either season.

I have said that our grafting is all done in April. The old native trees are fast being changed to finer fruit, and thousands of stocks are grafted every spring. The work is often done carelessly. Limbs of two or more inches in diameter are cut off, the scions inserted, the grafting cement is spread on, and no further attention given to the matter. And yet it is very rare to see a stock dead, or imperfectly healed, even under the rudest treatment, and such being the fact, there can be little danger of injury from the cause referred to, in pruning with ordinary care at the season of grafting.

I have recently examined several orchards which have been uniformly pruned in April, and among the rest that of FREEYE DEARBORN, Esq., of this place. His trees are among the best within my knowledge. He informs me that he raised them from the *seed*, planted about twenty-six years ago; and set them where they now stand, nineteen years ago. He gathered one hundred and fifty barrels of the Baldwin, last year, from forty trees—being all the trees in one enclosure, which are old enough to be reckoned bearing trees. He has many others, principally of a younger growth. From one of the forty, he took nine barrels of fine fruit.

If we judge Mr. DEARBORN by his *fruits*, we must concede that his principles cannot be far from correct. Upon examining his orchard with him, for the purpose, we could find no indication in any instance, that injury had resulted from pruning. There appeared no mark of disease or decay where the branches had been cut off, and yet Mr. DEARBORN says he has pruned always in spring, and has never applied anything to the wounds, or even used a knife, after removing the limbs with a saw.

So much for the practice, and now let us see how the most rational theories correspond with these results. I shall attempt no scientific examination of the question *by what power* in nature the circulation of the sap is carried on. Some facts in regard to it, are obvious. We know that in the spring the sap rises from the roots to the branches. That it rises *not* by capillary attraction merely, and *not*, in the first instance, by any attracting power, exerted by or through the leaf-buds or branches, would seem to be true, because the sap flows in great quantities from the *stumps* of trees recently cut. Every boy in a sap-sugar country, has drunk from the top of a rock-maple stump, hollowed out to retain the up-rising sap. Whether as much sap flows from such a stump as could have been drawn from the tree, by tapping in the ordinary mode, I have no means of knowing. The pressure of the up-rising sap is, at its first flow, very great. In Gregory's Dictionary of Arts and Sciences, it is stated that by affixing tubes to the stumps of vines cut off at the rising of the sap, it has been ascertained that the sap rises in the tubes *thirty-five feet* above the stumps, or about the same height as a column of water equal in weight to the atmosphere. And a French writer, M. DUTROCHET, in a more recent work, states the ascending force of the sap of a grape-vine, to be sufficent to raise a column of mercury to the height of twenty-eight inches.

In the appendix of Dr. CHARLES T. JACKSON'S Report upon the Geology of New-Hamp-

shire, may be found, under the title "*Endosmose and Exosmose*," a most interesting theory of the circulation of sap, which I should be glad to see entire in the Horticulturist, at some convenient season. It rests upon *some mysterious inherent tendency of gases and of liquids of different densities to commingle*, a tendency which neither the power of gravitation, nor the intervention of any *membrane*, either animal or vegetable, if the cellular tissue of plants and the thin diaphragms that lie at intervals across the sap vessels may be so termed, can overcome. This tendency is so strong as to force liquids through a piece of bladder, as may readily be ascertained by experiment, in the manner pointed out by Dr. JACKSON. The same principle, of the transmission of gaseous matters though membranes, has been applied to explain the chemical phenomena of respiration. Whether the fact that the sap rises and flows from the stump, where there is no liquid above to *entice* it upward, does not conflict somewhat with this theory, as applied to the circulation of the sap, may deserve consideration. But whatever be the principle of the motion, this "upward striving" of the sap occurs chiefly in spring. At least, at that season, it has a power greater than at any other. And it seems to be generally conceded, that it has then not only a peculiar *impulse*, but also a peculiar *character* or *quality*, and that the first flow of the sap is designed to promote the growth of *wood*. If this be so, we should infer that wounds made before the force of this peculiar sap is spent, that is to say, before the growth of the wood, would heal more readily than those made afterwards.

At page 49 of your Jan. No., under the title "Fruitfulness Promoted by Late Pruning," in an extract from a French publication, may be found what seems a rational theory about pruning, which may be briefly stated thus. The growth which is made in early spring, is induced entirely by the sap in the roots. By diminishing the top previous to the rising of the sap, the remaining shoots receive the sap designed for the whole, and therefore make a more vigorous growth. The fertilizing sap which induces fruitfulness, is not formed until later, the leaves being the organs of its formation. By a late pruning so much of the vitality of the tree is wasted, as has gone into the growth of the branches removed. A late pruning promotes fruitfulness at the expense of the vigor of the tree, as it seems to be generally conceded that anything that checks the growth of the wood, as root-pruning and the like, tends to the formation of fruit buds, and the converse seems to be true, that great fruitfulness, by whatever means induced, checks the growth of wood.

That the removal of part of the top in early spring, promotes the growth of the remainder, seems evident from the rapid growth of scions, even when set in full grown trees; and probably no one will contend that the growth of wood is, in the same degree, increased by pruning in summer. It is a common, and doubtless correct idea with our farmers, that to kill bushes they should be cut in summer, and that if cut in winter or spring, the life principle is still left active in the root, and they will spring up anew. I have tried the experiment of *heading-in* young apple trees to promote their growth. I was aided in my first *trial*, by a drove of cattle, which in the spring of 1847, broke into my orchard and browsed off nearly the entire tops of thirty fine trees, of which part had been grown there one year, and part were set the previous autumn. Their mode of pruning was sufficiently *thorough*, as they left most of their *subjects* no limb more than six inches long, but the style of execution was barbarous in the extreme, many of the branches being *split* off, and the rest, as HAMLET said of the speeches of the players, "*mouthed* most abominably."

The artist FUSELI, used to say to his wife, when any extraordinary trial of temper occurred to her, "My dear, why don't you *swear* a little, you don't know how it would ease your mind!" People find relief in different modes. I thought it a favorable oppor-

tunity to observe the effect of heading-in young apple trees, and so smoothed matters over as well as possible with my pruning knife, and awaited the result. Many of those trees made shoots *four feet* long the following season, and now they are of about the same size as those which escaped the operation.

I have since cut back every other one of forty trees, at the time of transplanting. My opinion is, that the growth is rather promoted than retarded by this process, but that the tree is disfigured, and requires far more subsequent attention to keep it in order. A curve, like that produced by budding, is made at the place where the twig is cut off, and often *several* shoots are thrown out in the place of the one removed, so that it is difficult to keep an open top, so desirable in an apple tree. I much prefer *thinning* the tops of apple trees, to shortening their leading shoots.

In thus suggesting my views, Mr. Editor, I wish distinctly to disclaim any attempt at originality. The various theories above stated, are by no means overlooked in your valuable treatise upon Fruits and Fruit Trees. Several considerations must always modify the views of writers on this subject. My own experience has been only in a section of the country where the apple is a healthy tree, and little liable to disease or decay, from the wounds of the pruning knife, and where high manuring is necessary to obtain a sufficient growth. With a soil and climate of a different character, the same theories might lead to different conclusions. Even the reasons of *convenience* for spring pruning, which have been given, although almost imperative upon us, would have no force where the season is longer, and land more abundant and fertile. If my views seem heretical, I shall be happy to have them corrected. The true idea is, for each of your correspondents to *speak out* as he thinks. Upon this, as upon most other subjects, "error of opinion may safely be tolerated, where reason is left free to combat it."

In conclusion, perhaps a hint may not come amiss, from one who has at least *followed* a good example, that your correspondents affix their own names to their communications. Such friends of the cause as JEFFRIES, and "A CONSTANT READER," ought not to "hide their light under a bushel," by the use of fictitious signatures; and as to the beautiful "WILD FLOWER," (surely beautiful *in spirit*,) what right has she to date from "In the Bushes," and to keep her "local habitation and her name," a mystery. At all events, she gives a new interest to the Horticulturist, and your readers may flatter themselves that if she is, indeed, "born to blush unseen," she does not entirely "waste her sweetness on the desert air." With much respect, HENRY F. FRENCH.

Exeter, N. H., April 10, 1851.

ON THE SEASON FOR TRANSPLANTING.

BY JOHN TOWNLEY, PORT-HOPE, WISCONSIN.

MUCH difference of opinion prevails respecting the most suitable time for transplanting. Some prefer early in the spring, others late in the fall; and both parties are generally enabled to refer to successful results in support of their opinions. So much, indeed, depends on the weather immediately after planting, and on the care observed in performing the operation, that we not unfrequently hear of success having been attained, even at midsummer. It is probable, however, that if a series of comparative experiments were made, during several successive years, that one period would be found to afford more satisfactory results than any other.

I am inclined to believe that there is a certain period, or rather a certain stage in the plant's annual growth, when it it may be removed with a better prospect of success, than at any other time. My notions on this point do not, I am aware, exactly coincide with those of writers who are generally considered high authorities in gardening matters. I am the more desirous on that account, to state briefly in the pages of the Horticulturist, what are the facts and principles on which my opinions are founded, and if other readers of the Horticulturist, whose experience may differ from my own, or who may consider my theoretical views unsound, should forward to you a statement of their experience and objections, we might, in the end, be enabled to understand more clearly the causes of success or failure at different seasons, and be induced to make further inquiries, and more accurate observations, by means of which more correct views might ultimately prevail, and a more uniform and successful system of transplanting be established. LINDLEY, in his Theory of Horticulture, considers that the most favorable time for transplanting, is during the months of November and December, or, between the fall of the leaf and the earliest part of spring, and chiefly for these reasons; because the roots of a plant are necessarily more or less injured in the process, and are consequently less able to support the stem, than they were before the mutilation took place; and in summer, when there is the greatest demand upon them, owing to the perspiration of the foliage, the roots are most essential; but in winter, when the leaves have fallen, they are comparatively unimportant, as is evident from a very common case. Let a limb of a tree be felled in full leaf, in June, its foliage will presently wither, the bark will dry up, and the whole will speedily perish; but if a similar limb be lopped off in November, when its foliage has naturally fallen off, it will exhibit no signs of death during winter, nor till the return of spring, when its efforts to recover, by the emission of leaves, only accelerates its end. These two propensities are considered to include the most essential parts of the theory of transplantation.

If the trees to be transplanted had to be carried a considerable distance, or were likely, through any cause, to remain unplanted several days, then I have no doubt that a greater number of plants would be found to live, and that the success upon the whole would be more satisfactory, if they were transplanted in November, when the leaves had fallen, than if they were transplanted at any other time of year. But if it is intended merely to transplant from one part of a garden to another, or from a nursery within a day's journey, as will generally be the case, then there seems to be good reasons for concluding, that providing the precautions in the "Theory of Horticulture" respecting the preservation of the roots, and the selection of a suitable day, be attended to, those plants will be found to succeed most perfectly, which are transplanted early in autumn, soon after the leaves begin to fall, but while a considerable quantity yet remain in a mature and efficient state I have been led to this conclusion, not only by the results of my own practice, but by considering the state in which the elaborated sap is deposited in the wood during winter; the changes this sap must undergo in early spring, to fit it to produce and support new leaves and roots; the necessity of efficient roots to produce this change, and the necessity of mature leaves to speedily repair the injury done to the roots, and to produce fresh fibres. There is evidently a wide difference between transplanting a tree in summer, when it is in full leaf, and in autumn, when the leaves have partially fallen. In the former case, there would be so many adverse causes to contend with, that success would be very doubtful; there would be long days; a probability of much bright sunshine; a comparatively dry atmosphere, much unripened wood, and the most profuse perspiration from the leaves. But in the latter case, the objections on the score of solar and atmospheric influences,

would be considerably modified, the young wood would be nearly ripe, and in consequence of the diminished number of leaves, there must be a corresponding diminution in the supply of sap required from the roots; consequently, any mutilations which might take place, if trees were carefully transplanted, would not, it is reasonable to conclude, be felt to an injurious extent; by the action of the mature leaves which remained, the injuries which the leaves had sustained would be speedily repaired, new roots would be immediately produced, and the plants would be established before winter, and be prepared to grow with nearly, if not quite, their usual vigor in the following spring.

It is now generally known that leaves, in the first stage of their existence at least, and all other parts of a plant, are composed of and supported by matter which has been previously elaborated, or prepared by mature leaves. Every plant then contains within itself, during winter or its season of rest, a fund of organizable sap, by which its first emitted leaves, &c. are supported. It is not, however, stored up in a fluid, but in an inspissated or concrete state, and before it can be made available for the support of leaves, &c., it must be dissolved by aqueous sap absorbed by the roots previously to the unfolding of the leaves; and in proportion to the quantity of sap thus prepared, which a plant contains previously to the renewal of its growth in spring, so will be, in a great measure, the size and vigor of the first emitted leaves and shoots. The roots of plants, then, are obviously of great importance to them during winter as well as summer, and that season must therefore, I think, be the best for transplanting, which, with little risk of loss or injury from atmospheric influences, insures the speediest renovation of the roots.

In my earliest gardening days, long before I remember to have read any work on vegetable physiology, so that my opinions were not influenced by any theoretical views, I had arrived at the conclusions, that if I transplanted a tree soon after the leaves began to fall, I should have a vigorous growth of wood, and of the smaller fruits, as the currant, a good crop of fruit also, in the following summer; if I transplanted in the winter, when the leaves had fallen, I should have a feeble growth of wood, and a comparatively puny crop of fruit and if I transplanted in spring, when the buds were about to burst into leaf, I should generally have a free growth of wood, but little or no fruit, and my subsequent experience has afforded me no reasons for differing materially from the above conclusions.

By way of illustration, I may mention a somewhat remarkable instance of successful transplanting at the time I recommend. A five year old tree, of the White Eagle variety of the gooseberry, was transplanted when the leaves in the center only, had fallen; in the following summer I exhibited twenty berries, the produce of this tree, at the meeting of a horticultural society I was connected with, and obtained a premium for them. I never, either before or since, had a crop from that tree of equal size and beauty, nor had there been twenty berries of that variety, so large, produced at any former exhibition, though nurserymen who had several trees to select their fruit from, were members of the society, and exhibitors. Now, it is evident that the tree had entirely recovered from the effects of transplanting before winter, before the time had arrived when LINDLEY considers it safest to plant. If it had been transplanted when the leaves had fallen, I do think it would have been almost impossible, however much care had been taken in the operation, to have had so vigorous a growth of wood, and so fine a crop of fruit, in the following summer. There would, doubtless, have been little or no difference in the amount of organizable sap which the tree would have contained during winter, whether it had been transplanted before or after the leaves had fallen, or if it had not been transplanted at all. The whole difference in the vigor of the tree in the following spring, under these different circumstances, would have been entirely owing to the comparative activity or efficient state

of the roots before the leaves unfolded. Most eminent physiologists are of opinion that food is absorbed from the soil almost exclusively by the extremities of the roots, called spongioles. Owing to the delicate nature of these organs, it it hardly possible to preserve any considerable quantity of them, even by the greatest attention and care; hence the importance of transplanting at a time when the damage to the roots can be most certainly and speedily repaired. The influence of mature leaves on the formation of roots, is now generally understood. ANDREW KNIGHT, in a paper on the Detached Leaves of Plants, said—" he had frequently observed in his experiments, that the destruction of the mature leaves of young plants suspended the growth of the roots." Many experiments have been made of late years, with detached leaves, that is, leaves without any wood or even a bud at their base. I have been curious enough to grow them, and found that with due care they will live a considerable time; they add considerably to their substance, become thick and fleshy, usually form a tuberous sort of base, and emit roots abundantly. LINDLEY speaks of the advantages possessed by evergreen over deciduous trees, in transplanting, owing to the presence of efficient foliage. " As evergreens," he remarks, " are never deprived of their leaves, so they are never incapable of forming roots; on the contrary, they produce them abundantly all winter long, and rapidly at any other period of the year which is favorable to their growth, so that they are capable of making good an injury to their roots much more speedily than deciduous plants." Then why not plant deciduous trees at a time when a part of the foliage remains in an efficient state, and enable them to repair their damaged roots as speedily as evergreen trees? It is certainly possible, as may be objected, that the weather early in the fall, might prove so unfavorable as to injure the newly planted tree; on the other hand, I believe it is certain, that if favorable weather should be experienced, the tree would grow with greater vigor the following year, than if it had been removed at any other time. But, considering the inefficient state of the roots of a winter-transplanted tree, may it not be asked, is it not also possible that the weather in the early part of spring might prove so unfavorable that " the efforts of the tree to recover itself by the emission of leaves, would only accelerate its end?" It is well known to planters that this may occur, and I think it must be conceded that the growth of a tree planted after the leaves had fallen, would be comparatively feeble, even under the most favorabe circumstances. Owing to the damaged state of its roots, a scanty and deficient supply of aqueous sap would be absorbed in early spring; a less quantity of organizable sap would be dissolved; the buds would be imperfectly nourished, and would not acquire that size and plumpness, so sure a sign of health and vigor; the first emitted leaves would be comparatively small; a less breadth of foliage would thus be exposed to the light, and a less quantity of sap would therefore be elaborated in spring and early summer; hence the puny growth of the fruit and young wood, and the crippled state of the tree for that year at least; it would in fact have the appearance so well understood by the phrase, "a transplanted tree."

With respect to transplanting in spring, when the buds are about to burst into leaf, I do not think it advisable to defer transplanting till then, if it can be avoided, although the growth of several trees which I have removed at that time has been very satisfactory, and seemed to me much more vigorous than it would have been if they had been planted soon after the leaves had fallen; but early in the fall is every way preferable. A plant, I believe, will be found much more susceptible of injury in spring, than it is in the fall. Dry withering winds frequently prevail in the early spring months, and they constitute one of the chief objections to planting at that time; but supposing the weather to be as favorable as in the fall, yet the difference between the functions of mature and young leaves, would

be sufficient to make fall planting more successful generally. Gardeners know the importance of bottom heat in inducing cuttings to strike root, and the soil in the fall will be warmer, as compared with the air, than it is in spring, and will probably, in consequence, be more favorable to the emission of roots. Spring, moreover, is a very busy time with the farmer and gardener, and work which can as well be done in the fall, should be disposed of at that time. Besides, by planting early in the fall, we have the choice of nursery stock, a matter of some importance.

I mentioned that success in planting depends much on the weather, and on the care observed in performing the operation. Mild, cloudy, moist weather should always be selected for planting, if possible. Leaves perform their functions by the aid of diffused light, or in cloudy weather, as well as in bright sunshine; they are not, indeed, capable of doing the same amount of work, but in cloudy weather, and with a damp atmosphere, there is less evaporation from the leaves, and roots do not dry so quickly when exposed to the air. The surface of roots should never be suffered to become dry. When removing from one part of a garden to another, no more plants should be lifted at once than can be planted while the roots continue moist, and when transplanting from a distant nursery, they should be coated with puddle, and further protected by moss and matting.

In planting, a space should be dug out wide enough to allow the roots to be spread horizontally. This is seldom attended to as it ought; many seem never to consider that a plant is a living being, requiring food, or if such a thought occurs to them, they must conclude that it is a matter of little moment how the roots are disposed of, so that they are buried in the soil. The quantity and quality of fruit produced in after years will be influenced to some extent by the character or position of the roots, and by the mode in which they are distributed through the soil. During the growing season, there is a more or less constant motion of the fluids in a soil; downwards when much rain falls, and upwards when dry weather prevails, to supply evaporation; by this means food is presented to the roots, and it is obvious that a plant must work at greater advantage whose roots extend horizontally six feet, as compared with one whose roots do not extend over more than half that distance. If we tether a calf to a stake in a pasture, the food can only be available within the length of its tether; extend the tether but a little, and by the increased circumference of the circle the supply of food is considerably increased. Not only should the main roots be spread horizontally, but the lateral fibres should be so arranged as to cover as great a surface as possible. When the roots are spread, I cover them slightly with earth, then lay on a coating of manure or compost, apply water, and level with the common soil. Some, when planting fruit trees, dig out the earth below where the roots are to be spread, and add a foot or so of compost, but unless a soil is very poor, I prefer laying the manure about the roots. The fibrous roots of plants are so constituted as to grow most in that direction wherein they meet with most food, and it is desirable to keep them near the surface. The shallowest planted trees are generally the most fruitful, and many an unthrifty tree has been restored to health and fruitfulness, by simply raising its main roots nearer the surface.

The character or the position of the roots of a tree, I have found a matter of some importance. The nearer they spring from a common center the better,—I mean there should be one tier or whorl, above another. This will not be the case, or at least not to an injurious extent, if cuttings are not planted more than about three inches deep, or if seedling trees are not replanted deeper than they at first grew. But I have observed in cases where cuttings were abundant, that many have been made too large, and planted too deep; roots were emitted the whole length of the part inserted, and as it is usual to raise young

plants in land in good condition, and as large cuttings contain within themselves a much greater quantity of organizable matter than small ones, they grow with great vigor at first, and soon become showy and saleable plants; but I never could make trees of this description grow well afterwards, nor produce fine fruit. When in the course of time, the soil has become somewhat exhausted, and manure is applied, the difference in the position of the roots begins to tell. Manure is usually laid on, or worked into the surface soil round the plants, and its soluble fertilizing matters are conveyed to the roots by the motion of the fluids in the soil, in the manures previously mentioned. A tree with four or five tiers of short roots, is now much in the position of a tree whose roots have been doubled and cramped together in transplanting; it has not that extensive and efficient horizontal network of fibres, as a tree whose roots have all sprung from the base of the cutting.

JOHN TOWNLEY.

Port-Hope, Columbia Co., Wis., 1851.

HOW TO GROW MUSHROOMS.

BY WILLIAM SAUNDERS, BALTIMORE.

AMONGST the many valuable communications in the Horticulturist, this esculent has not received the attention which it deserves. Many persons suppose that there is great difficulty in its artificial production, almost amounting to a mysterious secret known only to a few.

The poisonous properties of many varieties of fungi, and the difficulty of distinguishing the good from bad, also militates against them, and renders it necessary to be cautious in making them an article of food. Nevertheless, mushrooms are very generally esteemed when properly cooked, and are nutritious when used in moderation. Chemically, they have more resemblance to flesh than any other vegetable. In some parts of Russia, it is said the peasantry depend on mushrooms and bread for the greater part of their sustenance. They employ about fifty kinds of fungi as food. In Rome there is an "Inspector of Funguses," who attends the markets as a guarantee for public safety, and strange to say, our common edible mushroom, (*Agaricus campestris*,) is interdicted; any specimens of it brought to the fungus market, are sent under escort and thrown into the Tiber.

It appears from the remarks of mycologists, that the majority of funguses are harmless; the poisonous varieties being the exception, the innoxious and esculent the rule. But the difficulty lies in the selection, as we have no definite guide to point out what sorts are, or what are not poisonous; even some of the wholesome kinds acquire noxious properties, when grown under peculiar circumstances. Soaking in vinegar destroys much of the poisonous qualities if present. Heat also extracts the deleterious properties from many that would be unsafe to eat in a raw state. Various tests have been recommended. The presence of a free acid has been considered a sign of harmlessness. This is found not to be conclusive, as many, good and bad, will redden litmus paper. Cooking them with a silver spoon, under the impression that if bad the spoon will change its color, is also an erroneous idea. Cooking an onion with them is said to be a good test; if they are edible the onion will maintain its original color, while it will turn black if the mushroom is poisonous. Selecting by color has also its advantages; many of the most noxious species are of a snowy whiteness, while others of a less tempting color are perfectly harmless, so that great care and experience are requisite to discriminate those that can be eaten with safety.

The *Agaric campestris*, or common mushroom, is the only species that is generally grown artificially. It is thus botanically described: Stipes, (or stalk,) two or three inches in length, white, solid, fleshy, furnished with an annular veil, (a thin membraneous substance encircling the stalk.) Pileus, (cap or edible part,) fleshy, dry, convex, at length plane, white, changing from yellowish to brownish. Gills, (thin parallel plates underside of the cap,) free, ventricose, (swelling unequally on one side,) pink, changing to deep purplish brown. Flesh, (internal substance,) white.

There are several species of the Agaric besides the above, and also a few varieties of the *A. campestris* that are sometimes grown for using in a recent state. It is unnecessary to describe them here, as those who purchase spawn need be under no apprehension of receiving a spurious article; at least so far as my experience goes, I have never seen disappointment in this respect. So far from there being any difficulty in growing them, I venture to say that not one in fifty who makes the attempt will fail. Of course, some little attention is requisite, as with everything else artificially circumstanced. A knowledge of the condition under which they are most plentifully found in nature, will be of material assistance to the grower. The germs of fungi seem to be widely diffused in the atmosphere; all that is wanting for their development being a favorable medium. In very dry seasons, mushrooms are most plentiful in low situations, on strongish soils; on the contrary, should there be much wet, they are more abundant in upland and drier localities. A continuance of warm, dry weather, followed by slight showers, and a hazy, still atmosphere, brings them most profusely. These considerations are worthy of keeping in mind in their artificial culture. There is no particular season for making a mushroom bed. In winter it requires to be under cover, and in summer the difficulty lies in keeping it cool and moist. Autumn is perhaps the best season for building a bed out of doors, and if a constant supply be an object, a bed should be made up in some spare cellar about the beginning of November.

Before entering into the details of management it may be useful to make a few remarks upon the propagation of spawn. Summer is the best time for performing this operation. Procure some horse droppings; if there is a sprinkling of short litter with them, so much the better; cow dung and light loamy soil, or road scrapings, in about equal proportions; it is not particularly necessary that they should be in exact quantities. I mention this in passing, as an idea sometimes gets abroad, that unless everything is mathematically adjusted by number or weight, it would be folly to expect a satisfactory result. Mash these ingredients together with water, into a thick mortar, and spread it out three inches in thickness, in an open shed to dry. As soon as firm enough, cut it with a spade in squares of seven or eight inches, set them on edge, and turn them occasionally to facilitate their drying. When they will admit of being handled with safety, cut with a knife two or three holes, about two inches in diameter, little more than half through the brick, and fill each hole with good spawn, plastering it over with a portion of what was cut out. They should now be left until quite dry. Have ready a quantity of fermenting manure which has been well sweetened by frequent turnings. Spread a layer of this six or eight inches in thickness, and build the bricks on it with the spawned side uppermost, drawing the pile up to a point, then cover the whole with the warm manures. A genial warmth of about sixty degrees will be sufficient to cause the spawn to run through the whole of the bricks; when this takes place the process is ended. They can be laid past in a dry place, where they will keep good for years.

Mushroom beds out of doors may be made of any material capable of producing a mild heat by fermentation. Stable manure is best, taking long and short as it comes to hand,

tossing it into a heap to ferment. Upon its coming into a good heat, turn it over, bringing the rougher portions into the center; this should be repeated until it is well mixed and equally rotted. The object is to bring the whole into an equal state of fermentation without rottenness; to drive off excessive moisture and subdue the burning heat, with least possible loss of the essential gases. If a third part of old hot-bed manure is mixed with it, it will moderate the heat, and give the bed a consistency that it would not otherwise possess. Having it in readiness, choose a spot for making the bed; if under the shade of a tree so much the better. Mark out the ground four or five feet wide, and length to correspond with the quantity of manure. Commence by throwing in a layer of the least decayed portions of the dung; then build the whole up in a rounded ridge three feet high. It must be equally and firmly beat down, that it may produce a mild, equable heat. Push a few stakes at intervals all round; drawing these out occasionally and feeling them with the hand, will afford a tolerable estimate of the interior warmth. The heat should never exceed ninety degrees after the bed is put up. If likely to get warmer than this, make holes all over it with a stout stake, and when the heat subsides to between seventy and eighty degrees, it is ready for planting the spawn. Beat the bed evenly all round, and insert the spawn just below the surface, in pieces the size of a hen's egg, twelve inches apart. Then case it over with a layer of strong loamy soil two inches in thickness, beating it firmly and left quite smooth. To prevent accident from over heating, it should only be partly soiled at first—say half way up—covering the whole some days afterwards. To prevent the soil from cracking in dry weather, a thin covering of short straw or hay may be thrown over it; very little watering will be necessary. When it is found requisite to moisten the surface, let water pass through a fine rose on the outside of the covering, which is preferable to applying it directly on the bed. Should it be made up about the middle of August, mushrooms may be expected towards the end of September, from six weeks to two months after spawning. When the nights become cold the covering should be increased, and to guard against damp, choose a clear day occasionally, turn off the covering, remove all decaying matter, and when all is dry, cover as before. It will keep in bearing for two months or more, if the interior heat is preserved by additional covering.

Various schemes may be resorted to for obtaining mushrooms in winter. Those who have a green-house may make a bed in the furnace room, if there is convenience, taking advantage of the heat that escapes from the furnace. A good supply may be had from a bed formed underneath the plant stage, provided the drippings of water from the pots above be guarded against by boards or water proof cloth. Portable boxes three or four feet long, two feet wide, and one in depth, filled with horse droppings and spawned in autumn, set in a dry place, will, when soiled over in rotation, and placed in the warm end of a green-house, afford a moderate supply. Even good sized flower pots may be thus prepared, and a few introduced at intervals. The equal temperature of an underground cellar, or root-room, is very suitable for the growth of this esculent; in such a place they may be had the whole year from successional beds, without much trouble or expense. The best crop I ever saw was in beds on each side of a close shed, with a row of fermenting manure between them. The frequent turning over of the manure filled the place with an agreeable moisture, and obviated the necessity of watering. The ammonia disengaged by this process was also decidedly beneficial. Shelves, four feet wide and one in depth, rising one above another, will be found economical where space is limited. Where an ample and constant supply is wished, it is better to erect a structure on purpose. This need not be a costly affair. A house thirty feet long, ten wide, and ten feet high to the ridge,

built with timber, would not be expensive. Allowing three and a half feet on each side for beds, there would be three feet in the center for a path, underneath which a flue or hot water pipes should be placed. By having a bed on the surface, there would be space for two tier of shelves on each side, affording in all upwards of six hundred square feet of surface for growing the crop. This would be sufficient for a constant supply the whole year. Means should be provided in the roof for light and ventilation; four windows, three feet square each, would be sufficient for this purpose.

The principal material for forming beds in winter, or at any season, on shelves, should consist of horse droppings, with a little short litter intermixed. As this is collected, spread it out thinly to dry, turning it over frequently to prevent violent heating. The object is to get it into a dry state without decomposition. When it is in this latter condition, commence making the bed by throwing in the manure to the depth of three or four inches, and beat it firmly with the back of a spade, or, what is more expeditious, a flat heavy board, having two handles to work it with. Proceed in this manner until there is a depth of ten inches or so, firmly beaten, then insert the spawn just below the surface, as before. Insert the bulb of a thermometer into the bed, and should the heat rise above eighty degrees, bore holes eight or nine inches apart all over it. When the temperature is about seventy-five degrees, cover the surface with two inches of strong turfy loam, well beaten, leaving the surface smooth and level. The atmospheric temperature may range from fifty to sixty degrees with proportionate humidity. A sprinkling of short hay laid over the bed will keep it moist. When it is found necessary to moisten the surface, apply it on the hay, which is preferable to watering directly on the surface of the soil; pass it through a syringe or fine rosed watering pot, observing to use the water a few degrees warmer than the temperature of the house; better to give it frequently than too much at a time. If duly attended to, mushrooms will be gathered in six or seven weeks, and keep in bearing for two or three months. An occasional watering with weak, clear manure water, will prolong their duration. In gathering the crop, the mushrooms should be *twisted* up as far as possible without disturbing the young ones around. When cut over, the remaining part of the stem is liable to hurt the others from its decomposition.

WILLIAM SAUNDERS.

Clifton Park, Baltimore, Md., April 9, 1851.

THE SCIENTIFIC HISTORY OF A PLANT.*

BY JOHN M. AIISLEY, ESQ., Lecturer on Chemistry to the Hunterian School of Medicine.

(*A Lecture delivered before the Royal Medico-Botanical Society of London.*)

AT the request of my friend, the learned Professor of Chemistry to this society, I have been induced to throw together, into a connected form, a few facts, tending to show how the sciences of chemistry, geology, and meteorology, are by means of botanical geography and structural botany mutually related to each other. It was with a feeling of diffidence that I approached such a subject as this, considering how very limited my knowledge must necessarily be upon many of the topics which it includes; and this feeling was in no way diminished, when I found that this grouping of the sciences led me within the portals of a *new* science, which is founded upon more enlarged generalisations than any other that has gone before it, and this because it is the *last* product of the rearing and creative faculty,

* From the Gardeners' Magazine of Botany.

applied to a reviewal of the more extended surveys of the natural world which we have now, coupled with the accurate and profound knowledge of the labors and advances of philosophers during past years.

Natural history geography is the science to which I allude: a science which, besides geographical description, includes the general phenomena of the present life of the globe, in reference to their connection and mutual dependence. For the most part, this science is a production of the German schools. Schlegel, in his "Concordia," in 1820, put forth some of the germs of this branch of natural philosophy, (or rather this combination of branches;) in seven years afterwards, in 1827, appeared those memorable lectures on the "Philosophy of Life," embodying more extended and perfect views than had yet been suggested, even although, as early as 1806, and perhaps before, some of the sketches which at present form the "Aspects of Nature," were publicly delivered by their illustrious author. At the end of the fourth lecture on the "Philosophy of Life," we find expressed one of those truths to which I have just alluded:—"An exalted view and understanding of nature consists in its being contemplated not merely as a dynamical play of reciprocal forces, but historically in its course of development as a commencing life, perpetually relapsing into death, ever disposed to sleep, and only painfully raising itself, or rather raised and lovingly guided through all the intermediate grades into life. But beneath the huge tombstone of outward nature, there sleeps a soul not wholly alien, but half akin to ourselves, which is distracted between the troubled and painful reminiscences of eternal death, out of which it issued, and the flowers of light, which are scattered here and there on this dark earth as so many lively suggesters of a heavenly hope." Perhaps in a more eminent degree, Carl Ritter aided in forwarding the science of natural history geography. He, as well as Schlegel, recognised the vitality of the globe. Our views on this subject have to a considerable degree been enlarged and strengthened by the translation into English of the beautiful comparative physical geography of Arnold Guoyot—a work that cannot be too extensively read. But after all, there is one name which is more especially connected with this science—a name which has been by Professor E. Forbes termed its organiser, as well as originator: I allude to the Baron Alexander Von Humboldt.

Natural history geography may be regarded as including, among other things, the different chemical, geological, and general physical relations which have modified the distribution of plants and animals—of plants, because the conditions of a thriving vegetation are so various that under certain circumstances there springs a peculiar flora, giving a characteristic scenery to a country, and so influencing the mind. But such a distribution is also an index to the geology, because certain plants require a certain soil, and the quality of the soil depends mainly upon the geological formations; to the meteorology, because certain plants require particular amounts of heat and moisture. It is the proper province of chemistry to tell us the constitution of the soil—to show what ingredients are contained in a plant from the analysis of its ashes: so that chemistry, geology, and meteorology are, by means of vegetation, brought into a more intimate relationship. We can, however, look at a plant as the theatre for the display of certain physical actions—as an apparatus constructed for exhibiting certain purely molecular actions—endosmose, exosmose, capillary attraction, force of suction—so that general physics may be added to the other group. Under all these circumstances, therefore, the subject appeared not inapt to bring before the members of a society connected as this is with the study of botany.

In reference to the first portion of our subject—the chemical phenomena of vegetation—I may observe, that we are much indebted to the researches of Professor Liebig; and the

benefits he has conferred upon science are very great, for this reason: they are twofold in their nature. Besides the actual results of his own labors—and they are many and various—he opened a new field for the direction of the energies of other men. Were his theories all wrong—his researches all false—still, if by them the spirit of inquiry was aroused, in the end he would benefit science. The past history of inductive science confirms this statement. We cannot now afford time to trace the origin and rise of agricultural chemistry, but must be content with a slight glance at it as it now exists—a product of the mental exertions of the German professor.

The first point of importance upon looking at the chemical phenomena of vegetation, is, that there are various actions always going on in a plant, owing to the decomposition of certain portions of its structure, or of the materials whence it derives its food—actions extremely different to those mechanical actions to which I have before alluded. They are changes which at first sight appear to be strictly chemical, and which are very often confounded with each other. I refer to the decomposition of carbonic acid and of water—to the absorption of oxygen during darkness—to the emission of carbonic acid during the night. The decomposition of carbonic acid and of water may be designated as chemico-physical action; the absorbtion of oxygen during the night is entirely a chemical process; the emission of carbonic acid being, on the other hand, a purely mechanical operation.

For the decomposition of carbonic acid and water, we find that light is required; that where there is a deficiency of light this action goes on put partially. Researches have proved that while the blue rays are most active in germination, the yellow rays act more readily on the developed plant. Mr. Robert Hunt, in a lecture which he delivered at the Royal Institution last year, on "Light and Actinism," stated some valuable and curious facts. He considers germination to be entirely dependent upon the *actinic*, but to be actually impeded by the luminous rays; while on the other hand, this decomposition of carbonic acid, this lignification is most extensively carried on by the action of the luminous power, and is stopped by the actinic force. As summer advances, the thermic and the parathermic rays are most conducive both to fruiting and flowering. All that we can say to these carefully investigated and well proved facts, is, that they give us one of the most striking examples of the adaption of inorganic nature to organic life, that can be found in the whole range of physical science.

From the first moment of the germination of a seed, carbonic acid is always being absorbed, but not always, as I have before mentioned, being decomposed; for in the dark this action is stopped, but the carbonic acid still continues to be absorbed by the juices which the plant holds in solution. This action was very aptly compared by Professor Liebig—this emission of water and carbonic acid from a plant in the dark—"to a cotton wick enclosed in a lamp containing a liquid saturated with carbonic acid." Water and carbonic acid are taken up by the wick by capillary attraction, both evaporating on its exterior surface. In the night another action goes on in the growth of plants—the absorption of oxygen; an action as purely chemical, as the evolution of carbonic acid was purely mechanical. Yet, because they occur simultaneously, it was presumed that they were subject to the like causes; even after it was found that their ratios of action were not equal; for plants absorb more oxygen than they emit carbonic acid.

This nightly absorbtion of carbonic acid is, to a certain extent, independent of the life of the plant, not acting upon the main parts, but upon the blossoms, fruit and leaves, and the result of experiment has revealed to us the facts, that leaves containing highly nitrogenised compounds, or volatile oils, absorb oxygen more vigorously than leaves which contain neither of these principles. In the latter class of leaves the volatile oil, by the action

of oxygen, is converted into a resin. The Agave americana, absorbs 0.3 times its volume of oxygen in twenty-four hours; the Pinus abies, containing volatile and resinous oils, ten times its volume of oxygen in the same time; the Quercus robur, containing tannic acid, fourteen times its volume of oxygen; and the Populus alba, twenty-one times its volume of oxygen during a day and night.

I need hardly mention as a familiar example of these chemical changes, caused by the absorption of oxygen, Cacalia ficoides, which is sour in the morning, tasteless at noon, and bitter in the evening from the excess of hydrogen; it became tasteless when there was no excess of oxygen, and sour owing to the oxygen which it had absorbed during the night.

This decomposition of carbonic acid is most interesting to us as exhibiting clearly the real process of lignification; as helping to establish correct notions regarding that vegetable matter undergoing eremacausis which is familiarly known as humus; experiments have proved the insolubility of humus; calculations have demonstrated, that suppose there existed a superabundance of the most soluble salt of humic acid, still all the carbon which it might contain, would be totally inadequate to give us but a very small portion of that carbon which is found in vegetation. But another calculation was made as to a different source for the carbonic acid; a calculation which was based upon De Saussure's accurate determination of the amount of carbonic acid present in the atmosphere, an amount of a little more than one-thousandth of its weight; yet we find that the air contains no less sum than 3085 billions of pounds of carbon, a quantity surpassing in weight not only the carbon of existing vegetation, but also that which is at present locked up in the mineral coal which is distributed over certain parts of the earth's surface.

It may now well be asked, How lives the young plant before it comes in contact with the atmosphere, the source of its carbonic acid? The reply to this question is the key to the proper action action of humus. This humus is especially useful for the support of young plants; it takes oxygen from the air; and then furnishes the plant with carbonic acid —this is its great use. We see, then, that the process of nourishment in a young plant totally differs from those actions by which the well developed vegetable is supported. A young plant causes a certain quantity of oxygen to be abstracted from the atmosphere, while an old one furnishes us with a never-failing source of this gas.

I cannot help referring to the fact, that many juicy and milky plants in warm countries, flourish on a soil destitute of humus, containing absolutely not a trace of carbon; and sometimes are found being held by one point of attachment to this barren soil—such shrubs as the Cactus and the Caoutchouc are among this number. Baron Humboldt especially mentions the Cactus tribe. In his beautiful paper on the "Physiognomy of Plants," he states:—"In the waterless plains of South America, animals suffering from thirst seek the *Melon-Cactus*, a spherical plant half buried in the dry sand, and encased in formidable prickles, but of which the interior abounds in refreshing juice. The stems of the columnar Cactus often rise to the height of from thirty to thirty-two feet; they are often covered with lichens, and dividing into candelabra-like handles, resemble in physiognomy some of the Euphorbias of Africa." Again, in note 20:—"When one has been accustomed to see Cactuses only in our hot-houses, one is astonished at the degree of density and hardness which the ligneous fibres attain in old Cactus stems. The Indians know the Cactus wood is incorruptible and excellent for bars and the thresholds of doors. There is hardly anything in vegetable physiognomy that makes so irregular and ineffaceable an impression upon a newly arrived person, as the sight of an *arid plain* thickly covered, like those near Cumana, New Barcelona and Cora, with columnar and candelabra-like divided Cactus stems."

We must all allow, that this fact of the growth of highly ligneous plants containing juices in arid plains, is not in favor of an hypothesis that considers vegetable mold as the true source of carbon for plants.

Besides the property of decomposing carbonic acid, vegetables have also the power of decomposing *water;* hence the source of hydrogen. At first sight we must imagine that there must be a marvellous energy in the chemical process of vegetation, when able to effect what the electricity of a powerful thunderstorm accomplishes only feebly and imperfectly: but when we reflect upon the various methods by which water can be decomposed, this feeling is somewhat limited. The metals—some at common temperature, others at a red heat, and the same, or more of them in contact with a strong acid; and, as it has been beautifully shown by Mr. Grove, by heat alone.

We know that this action must take place, from the fact that caoutchouc, wax, and oils, contain more hydrogen than oxygen; and we also know that water must be the only source of the hydrogen. The water is decomposed, the hydrogen is taken up into a plant with the green principle of the leaf, which diminishes in quantity when oxygen is absorbed. Plants containing water and carbonic acid, and evolving only a little oxygen, give an acid,—evolving more oxygen, they form a neutral substance,—evolving a large amount of oxygen they give us an oil.

Again, chemical analysis pointed out *nitrogen* as a constituent of plants, and for a long time it was a question how this nitrogen was obtained; later experiments, however, have shown that it has its origin in the *ammonia* which is always found in the atmosphere.

It was found that plants would grow in charcoal, or in calcined earth containing not a trace of carbon, if watered with rain water, and this because rain water contains more ammonia—hence its softness. So there are two forms in which this ammonia, so requisite for vegetation, may be found: as a gas existing in the atmosphere, (though this is seldom the case,) and held in solution by water which conveys it to the soil. Agriculturists find that the *form* in which it is given is of more importance than the actual quantity. Carbonate of ammonia is often found in large quantities; but it is a volatile salt, and for this reason a very considerable quantity of the ammonia it contains is volatilized and lost. The object of gypsum as a manure, is to produce that double decomposition by which is formed carbonate of lime and sulphate of ammonia, a more stable compound.

The source of ammonia exhibits to us one of those beautiful and never ending cycles of mutual relationship upon which the mind of the real observer of nature always delights to dwell. Throughout the physical world, from its formation to the present time, there has never ceased to be a perpetual mutation of matter—a ceaseless, ever restless desire for change of form, and after some boundless wanderings, a turning back again, to undergo perchance the same work, though on a different subject—at a great distance from its former one—and after an inconceivably long interval had elapsed.

"Communion with nature awakens thoughts that had long lain dormant," enthusiastically exclaims the author of the "Cosmos." Surely this sentiment must find within a hearty echo, when for the first time we contemplate—actually by experimental demonstration—the imperishability and the indestructibility of matter: when, as in the case of the combustion of an organic substance with oxide of copper, the sugar, the volatile oil is destroyed, but its elements have assumed new forms, rendered cognizant to the senses by the balance.

It is this great fact which lends to my mind a charm—somewhat fanciful I must admit—for the science of geology. The thought that the oxygen—as carbonic acid was emitted so plentifully in the volcanic disturbances of the ancient world—which formed part of its

atmosphere, then passed into the composition of the flora of the gigantic vegetation of the coal-fields—the liberated oxygen in after ages uniting itself perhaps with a mineral, forming a sulphate—again to be reduced by organic matter to a sulphide—the carbonic acid freed again, passing off into oxygen by the vegetation of the oolite—taken up into the systems of the icthyosaurus—that this same oxygen, for what we know to the contrary, may even now be helping to carry on in us the vital process—is still at work to change again—to become as pure and free as it ever was, and not different from ourselves,—never to wear out or to decay, but while the world lasts to be pursuing a destiny predetermined before its existence by the Great Author of nature.

Ammonia is secreted from the body during life: it is a result of its putrefaction when dead. A thousand million of the human race, besides animals, annually die. How much nitrogen is thus given to plants, is a question that I think it is beyond the limit of science to answer. But it comes round to us again, though not exactly in the same form; for the plants supply the herbivora, who in their turn supply the carnivora. In some recent researches, I obtained from several coffins a nitrogenized compound called adipocere, rich in ammonia—in fact, an ammoniacal sap. In all cases, on opening a coffin, there was a powerful odor of ammonia; and as an illustration of the large amount of it in this adipocere, I may mention, that happening to have some in my pocket, on standing before a fire it began to melt; some ladies at the same time observing, "What a very strong odor of hartshorn there is!"

If all four can be represented by an oval, as some suppose—*ab ova omnia*—somewhat on the same principle, the actions of nature might be represented by a circle. The excrement of plants afford another example of circular change. Besides those which are gaseous and solid, there are some liquid excrements which are excreted by the roots and absorbed by the soil: these fluids are very rich in carbon, so that the amount of that element which is furnished to the young plant by the humus is actually, by the secretions of the grown vegetable, returned again to it.

But the greatest of all these circular changes is that which subsists between the animal and vegetable kingdoms—the principles of the two systems of life requiring the refuse, the one of the other. It would be altogether out of place here to mention any statistics as to the large amount of carbonic acid derived from artificial combustion, from thermal springs, from extinct volcanoes, or from the respiration of animals; but we know that if it were not removed the atmosphere could not for any length of time support life. But vegetation does this great work, and cultivation in most cases produces a purer atmosphere; so these plants serve the animal kingdom in two ways—by supplying it with food, and by affording it a pure atmosphere.

I can hardly conclude this sketch without making some reference to the origin of vegetable life, a subject which it is well to be cautious in approaching, because of the present imperfect state of our knowledge. Among the many theories of life, (so, I suppose, they must be termed,) although we cannot even attempt to reach ultimate causation, I may perhaps be allowed to express what may be termed a fancy of vegetable life, (for theory is far too grave a term to be applied here)—a fancy of vegetable life founded upon a review of Dr. Faraday's magnificent discoveries.

The vitality of a plant forms an episode in the history of discovery, because at the first animal life was regarded as totally distinct from vegetable life; but as facts accumulated, analogy in functional arrangement, though brought about by a different form of organic apparatus, leads us to suppose that there was but one known cause of vitality, both in plants and animals. In a plant, heat and light are considered as necessary, but not as the

first great moving power. Vegetable physiology advances, and seems to incline to the idea that the vitality of a plant is a purely chemical process.

Upon what is dependent, then, this chemical action that enables a plant to decompose both carbonic acid and water, that is always going on in it as a part of its life, and the source of its development? The magnetic discoveries of Dr. Faraday of the connection between magnetism, light, and crystallisation, have no doubt brought us to the eve of a great generalisation. We are in a state so happily described by Humboldt as "a state of presagement"—in one of those intervals that renders the history of philosophy so indistinct between the presentiment of an epoch and its actual realisation. We have the strongest grounds for considering galvanism, electricity, magnetism, as one and the same force; which force is a certain quality of matter termed by Professor Graham polarity, which is due to the presence of inherent magnetism. So then, we may almost go so far as to say, that the same force that deflects a ray of polarised light—that causes the crystal to elect a certain determinate position in the magnetic field—that gives polarity to the needle of the compass—that this same force causes the formation and growth of an inorganic cell.

Such may be considered as an unfinished and imperfect glance at some of the most striking points in the chemical history of vegetation; but our survey is not yet finished. The vegetable flame requires the introduction of certain peculiar elements which are not organic, but which, nevertheless, makes it subservient for the support of life, and for the growth of structure.

We do not now wish to discuss the exact degree of alkalies or alkaline earths required in certain cases, nor to trouble ourselves about the presence of organic acids in plants. We know that oaks require certain conditions for their existence; in some soils they flourish, in others they will not live. A barren and granitic soil amply supports the Pine and the Fir, but not the Oak; and this because such soils do not contain sufficient alkalies for the purpose. The Equisetaceæ, like the Oak, require much potash; a soil formed from the grauwacke and porphyry, nourishes these plants.

The Tobacco-plant and the Vine require lime; the Beet and Potatoes magnesia; Chenopodium likes nitrates; and the Fuchsia iodine; Cereals phosphates of ammonia and magnesia. For the growth of these plants, one or other of these constituents is required; but there are some soils composed of pure sand and limestone—they support no species of vegetation; they are absolutely barren. Argillaceous earths always exist in a fertile soil; their fertility being doubtless derived from the alkali they contain, because rich soils were formed by the disintegration of potash and soda felspars. Alumina is never found in the ashes of plants; its action is merely indirect. It is useful in condensing the water and the ammonia of the atmosphere. A cubic foot of felspar contains enough potash to supply an Oak-copse of twenty-six square feet with potash for five years.

We find, even in short excursions in our own country, great changes in the scenery of different places; this is often brought about by the predominance of a certain class of shrubs. We may pass a woody country—a country occupied as arable land—an entirely pastoral country. Whence this difference? From the soil, which influences the productions owing to the operations in nature of the facts which I have just stated. *Soil*, with *climate*, is omnipotent in influencing the distribution of plants; and the formation of soil and arable land is one of the main points of agricultural geology. Such a fact furnishes us with a very clear example of the connection existing between chemistry, botany, and geology.

But how are soils formed? This is yet a question to be explained.

In speaking of the imperishability of matter, I alluded to the changes which it is constantly undergoing, because the earth, from the first moment of creation, has been subject to the never-ending play of natural forces; and by looking at the present state of the globe, and then by reading its past history, the mutation of all material substance is thoroughly illustrated.

The progress of disintegration has not been much investigated; but Liebig has collected into his "Agricultural Chemistry" the results of most experiments on this subject. He divides the process of disintegration into two groups—waste, the result of mechanical force, and disintegration, properly so called, a product of chemical action. It by no means follows that both disintegration and waste may not be simultaneously taking place in the same rock, or in other words, both chemical and mechanical causes operating in unison, and by their union producing great effects.

The action of carbonic acid and water is generally to liberate in a soluble form the alkaline bases, producing frequently as an ultimate product, hydrate of silica, before which is often formed a soluble silicate. I presume that a descriptive detail of the properties of silicic acid would be superfluous; but an experiment of that talented chemist, Lavoisier, deserves notice here.

Silicates are more or less decomposed by the action of hot water; the opacity of the windows in hotbeds is an example of this. Lavoisier, on distilling some water from a clean glass vessel, found it left a residue; on weighing it, he also found that the glass retort had lost in weight what the water had gained: from this experiment it was obvious that a portion of the silica of the glass had been dissolved during the distillation.

It is needless to enumerate all the substances upon which chemists have operated; suffice it to say that their experiments have had a very extended range, and that they confirm all the statements made by those who preceded them in this investigation. In this memoir there are two points of especial interest. One is, that the alkalies are not quite so essential to the disintegration and decomposition of mere rocks, as it was at first supposed: for hornblende, epotite, chlorite, and rocks composed mainly of these substances, underwent rapid decomposition by pure as well as by carbonated water, and this without calling in the agency of an alkali; this experiment accounts for the fact that rocks of this kind are often more readily decomposed by meteoric agencies than are felspars: it enables us to trace the simple process by which plants are furnished with the lime and the magnesia they require, without our having recourse to any mysterious decomposing power of the roots of the growing vegetable. The second and most important result is, that potash, soda, and their carbonates, but especially carbonate of pot sh, is volatile at a red heat,—that many plants contain much alkali, whereby a very little is found in the ashes after incineration. So, by this incineration of the ashes of a plant, according to the ordinary rules for the analysis of vegetables, the Professors Rogers' statements show that a very large amount of error must not only have been by such analyses *introduced*, but by them *perp.tuated*. The ashes of anthracite, of bituminous coal, of lignite, contain not a trace of alkali, but digestion with water previously to incineration, reveals to us their presence—thus adding another proof to the vegetable origin of coal.

I have not gone into the minutiæ of any actual decompositions which take place during the disintegration of certain rocks, because my object is more to point out a train of thought than to dwell upon the facts by which these reflections may be produced. Our facts may be likened to the landmarks of the journey, but their attainment is not its ultimate aim.

Having mentioned that certain plants require soils containing some particular mineral

constituent, and that for the most part soils are formed by the disintegration of the parent rock of the district, it is obvious that these facts, when applied on a great scale to nature, must divide and influence vegetation; for according to the geological conformations of a country is its soil, and so is its flora.

The subsoil is generally in connection with the original rock, by whose wearing away it was formed, and the soil is in intermediate relation to it, not always having even the same color; for it may be a transplanted soil, or separated from the parent rock by a larger amount of gravel, in which case the white subsoil from the chalk, or the yellow from the clays, would not represent the color of the land's exterior surface. The depth, texture, and fertility of a soil is dependent both upon the mineral constituents and the easily disintegrating properties of the rock whence it is formed; and it is the physical and mineral, more than the geological age of a soil, that conduces to its fertility: old rocks may be barren in one place, but fertile in another.

In merely a geological survey of a soil we are apt to underestimate, if not to overloook, the important fact, which is played by water in vegetation. Yet, if we cast our eyes over a hydrographic map of the world, we find certain rainless districts, destitute of water courses, and where the air is rarified to allow of the condensation of aqueous vapor. What do travellers tell us of the vegetation of a tract of country so circumstanced? Why, in this rainlesss desert let but a little spring of water rise, it generates fertility in the limited sphere of its operations; an oasis is produced; and that arid ocean of burning sand rejoices in one small island of vegetable life.

Water is one local cause of influencing the fertility of a soil, but there are various others, many physical actions in one place shifting the superficial detritus which covers the more stubborn rocks; and if we do not take circumstances like these into account, we shall be apt to consider that geology gives us more information than it really does; to form the idea, that with a geological map before us, it would be no trouble by its inspection accurately to ascertain the soil of any particular country.

The mill-stone grit plains around Paris in a geological map of the district, would be similarly colored; yet each one of these plains has its own particular form of vegetation. Montmorency is covered with corn-fields; Sannois supports only a short sterile rod; Meudon is furnished with Spanish chestnut trees; the Aira flexuosa, the Melampyrum sylvaticum, the Pteris aquilina, all grow there. Only a minute's inspection clears up this seeming incongruity. We find, though no difference is pointed out by the map—for geologically speaking, there can be no distinction made: they are all mill-stone grits—we find in the one case the millstone-grit is mixed with sand; in another case it is mixed with clay; and, in the third, it is alone and uncovered.

Thus far we have pursued our journey, and now it is time that we pause. I would hope that my sketch has been clearly followed, and that my design, imperfect as it is, has been strictly adhered to.

In following the chemical history of a plant, we saw how interwoven were a variety of subjects with each other; we saw, too, that the plant itself is capable of reading to us many a lesson from the great book of nature, of bringing before us many of her beautiful operations; of exhibiting to us clearly and distinctly some fuller proofs of that design, and order, and harmony, so palpably manifested in this our universe.

So then man and nature can be viewed as two great forces here, the one progressive, and the other stationary, albeit, though not still, yet both working out their proper ends in the universal scheme of the Great Designer, which it is past the feeble ken of man to penetrate.

Such subjects as these must make us feel with Emerson that "the destiny of organised nature is amelioration, and who can tell its limits? It is for man to tame the chaos on every side, while he lives to scatter the seeds of science and of song, that climate, corn, animals, men, may be milder, and that the germs of love and benefit may be multiplied."

ON ARTIFICIAL ROCKERIES.

BY R. B. L., BOSTON.

Among the numerous natural embellishments which are so abundantly scattered over the surface of this country, and the natural facilities afforded for beautifying the private pleasure-ground of the wealthy proprietor, there are but few instances where these natural facilities have been advantageously turned to account in artificial decoration.

It would appear the taste of the Puritans, which swept everything bearing the semblance of grace and beauty, from their religious and civil architecture, inspired their decendants with a taste no less justifiable of sweeping everything from ornamental grounds that has the shape and form which nature gave it, and if a cropping rock or jutting ledge or projecting precipice, happen to come within the sacred limits of the so-called improvements, it must of course, be blown to pieces, (to build stone walls, perhaps, though plenty more may be found within a dozen yards of it,) nor is this pretext of utility itself always given, for who would have *rocks* in their garden or shrubbery, when they may be seen plentifully in the fields and uncultivated wilds, so in accordance with this taste? Away go the rocks, and their place—if it happens to be a slope—is supplied with a turf bank, yclept a terrace.

Now if natural decorations increase the interest and beauty of a garden, accordingly as they are treated in an artistic manner, so also do decorations merely artificial gain in proportion as they resemble nature. But the artificial has never the value or the interest of the natural, any more than a copy has the interest or value of an original picture from the hands of one of the old masters. So truly is this the case, when applied to garden scenery, that a place wholly artificial, however well executed, has nothing interesting or pleasing about it, until by age, it has obtained something of a natural appearance.

An object purely natural, in the midst of a pleasure-ground, is not only a pleasing relief to the mind, but is also more striking and impressive, more august and grand, than the ornamental vase, or the geometrical parterre. These may be pretty or beautiful, but even the hard, cold, stern features of a projecting rock, gives us a nobler and more exalted kind of pleasure than these artificial nicities. The practice of imitating the rude works of nature by making artificial rockeries has been attempted in England, on an extensive scale, and in some instances has been carried to an extreme, nearly as ridiculous as the famous rock of Semiramis, with all the rocks that lay in the shape of tributary kings around her. The object in most of these rock builders seems to be, who will have the largest pile, as if mere bulk were the only method of producing effect. Some of these noble stone gatherers have been pretty largely imbued with the same notions that filled the minds of the builders of the Pyramids, or the Tower of Babel, or the great wall of China, collecting from all parts of the country, at enormous expense, boulders and conglomerates, large masses of spar and basalt, as if determined to leave behind them a lasting memorial of their extravagance and bad taste, in the shape of a huge unsightly pile of stones.

It has been remarked by some elegant writers, that these gigantic efforts to imitate a

natural object, are generally the least successful, and it is indisputably true that these huge attempts at artificial rock making have invariably been the least happy in producing the anticipated results, and in some instances, as at Woburn Abbey, are an absolute disfiguration of the grounds. The Rockery at Sion House, considered in regard to the boldness and beauty of the design, or the tastefulness of its execution, is perhaps the finest piece of artificial Rockwork in Britain. It fails however in producing that effect upon the mind of the beholder, as a piece of landscape scenery, which such a mass of human skill and labor is expected to produce. The peculiar object of this rockery is certainly attained —if this was its only object—of forming a gradual, easy, and imperceptible boundary to the flower ground, but for this purpose detached masses of shrubbery are inconceivably better adapted; and could be accomplished at a trifling cost.

The Chatsworth rockery is but an unsuccessful attempt to impress the mind by an imitation of nature. Notwithstanding its magnitude, it is but a mimicry of some of the natural rockeries that might be seen at places of less repute, as at Penryn and other places in Wales, at Invermay, Dunkeld, Taymouth, and hundreds of places in the Scottish Highlands, and such natural rockeries as we frequently meet with in this country, wanting only a little help from art in the shape of walks, shrubs and climbers. Such spots we may see almost every where without looking for them, though in very few instances have any such spots been taken advantage of for ornamental purposes. And it is not uncommon to see splendid country mansions built by the side of a salt marsh without a prospect from itself, or a decent place for a pleasure garden around it—though numerous picturesque and beautiful locations could be found within a mile circle of itself.*

These rockeries already mentioned, cannot be regarded as anything else than a violent outrage upon the principles of taste; both are incongruous in the highest degree, and equally offensive to a well regulated judgment. Neither is in harmony or unity with the surrounding objects, and both are equally out of place, and equally void of the necessary appendages to effect. In the one there is nothing but a pile of rocks in an open lawn; the other a similar pile by the side of an artistical flower garden, and both exposed to view from nearly every side and from a considerable distance. When covered with foliage, so as to conceal the individual parts of the composition, their several beauties are lost, and the whole has the appearance of a large mound of earth covered with different varieties of plants, with here and there a rock sticking out among them. Again, if the plants be kept small by constant trimming, as is necessary to show the composition of the fragments, then the mind, in spite of all its enthusiasm, cannot conjure up any other idea than that the thing called a rockery is but an artificial heap of stones.

The rock garden at Chatsworth is perhaps the most extensive specimen of this kind of gardening in Europe of an artificial character, although specimens of rock gardening more extensive, and incomparably more interesting are to be found in many places of moderate dimensions, and without dogmatising on the subject, it is yet doubtful, to say the least, whether such a piece of landscape gardening is worthy of imitation, under circumstances similarly favorable to its execution, and no less essentially required as a concomitant of a garden landscape. The impression made upon the mind by the rock garden in question, is decidedly unfavorable to it, when compared with the other parts of the garden. On examining the rockery some time after its completion, with some others, we were particu-

* A very striking illustration of what is here stated, may be seen in the vicinity of Cambridge, Mass., where a country mansion lately erected, that, taking it as a whole—is probably the finest of which that State can boast, is built on a narrow strip of a few acres of low marshy land, with the said marsh on one side and the public highway a few rods from its front, and considerably higher than its own ground level, on the other.

larly struck with the tameness and insipidity of a work about which so much had been said and written; and instead of being the expression of highly cultivated and refined taste in a gardenesque landscape, seemed rather intended as a practical lesson to the next incipient volcano, that became active in England, that it might heave up the rocks and scatter about its boulders according to the principles of taste displayed in the Chatsworth rockery.

Large rockeries, like large flower gardens, lose their interest with their limited space. A large, open artistical or geometrical flower garden, of ten or more acres, has a far less pleasing effect upon the mind of the spectator, than one a quarter or half an acre in extent, situated in a retired recess of the pleasure ground. In like manner a large mass of rocks, however tastefully arranged, in a spacious pleasure ground, has less influence on the imagination than a small irregularly arranged group, in a confined and secluded nook, with all the wild savageness of primitive nature around it. Indeed, a low confined dell, the channel of a ravine, or a quiet secluded hollow, retired from everything architectural or artificial, appears to be the most proper place for a rockery. The spectator should come upon it quite unexpectedly, but not by a sudden transition of the general scene, although circumstances may often occur to render sudden transitions unavoidable.

One of the prettiest rockeries I ever beheld, was made in an old stone quarry, which in its original condition, was not only dangerous, but a serious disfiguration to the place. Trees were planted on the margin, and threw their dependent branches irregularly down the face of the rocks. Ferns and other plants, were planted in niches and clefts made in the rock in different places; paths were also cut for walking along the steep sides; groups were arranged in different forms and of different heights; jets were introduced in different places, in small basins, and formed the most enchanting spot imaginable.

It is not, however, absolutely necessary to deprive a small garden of rockwork, and the cottage architecture of this country, permits the nearer approach of rockwork than the enormous mansions of English gentlemen. The monotony and tameness of a villa garden may be considerably relieved and diversified by the introduction of rocks, especially if the grounds afford a position naturally favorable, such as natural rocks, or a secluded corner, or water in any form—for water, if possible, should invariably form an appendage to a rockery. But to introduce large stones and boulders on a lawn, or in a shrubbery contiguous to the house, or having them scattered about singly, on the grass, on the margins of a lake, or beside a bridge, as they are frequently to be seen, may justly be regarded as a monstrous infringement on taste, and a foolish mockery of nature.

Rockwork may sometimes be placed in the proximity of glass structures, and even in flower gardens, with good effect, when these are of a gothic or rustic character, but here the rockwork must have none of the savage wildness of nature about it, and consequently nothing of the impressive picturesqueness of natural rocks. It should be rendered conformable to the objects around it, and appearing to be placed there for the purpose of cultivating those plants that succeed best among rocks; or for showing the natural habits of plants that grow naturally among rocks, or those that produce a better effect when planted on them. In these cases the rocks should be more artistically and tastefully arranged. It should be clearly shown by their arrangement and accompaniments, that no attempt is made to imitate nature, but rather a proper place for displaying and cultivating the plants that are grown upon them.

Rockeries of this kind depend for their interest and beauty, more on the disposition of the plants than on any influence possessed by themselves,and therefore they should never be allowed to become bare, otherwise they dwindle down to meaningless conceits. They ought

also, to be formed of choice materials, as specimens of rare minerals, metallic ores, rich conglomerates, stalagmites, fossils, scoria, fine specimens of crystallography and vitrification, forming a kind of cabinet which excites the attention of the spectator, and affords interest and gratification to the more curious examiner, and tending also to divest the rockery of any incongruity which might arise from its being out of place.

It may likewise be observed that rockeries should always be in detached groups, and whether large or small, should never present straight lines or flat surfaces. The more irregular the arrangement, the more striking the effect produced. It should also be so situated as to be partly shaded and overhung by pendulous trees, to screen it from the glare of sunshine; it should always be rather cool, and if possible, shut in by itself by shrubbery, and if possible, also, should be accompanied by a jet d'eau or basin of water, or both.

To attempt giving rules for the arrangement of rockeries is useless, as their forms entirely depend upon the taste of the builder; and in this kind of work, more than any other branch of ornamental gardening, will the taste of the builder be brought out, and here, also, will be perceived the difference between those who have studied from nature, and those who have no vivid conceptions of natural beauty. It may here be observed, however, that the whole design should be diversified in its outlines, in its heights, and in its general forms. No two parts should bear the slightest resemblance to each other, and the greater the irregularity, the more interesting the effect.

The great artificial rock gardens at Chatsworth and other places in England, can neither be regarded as works of instruction, nor models of imitation, but rather monuments of extravagance, and may be viewed in the same light as the famous hanging gardens of Babylon. No person of refined taste and correct judgment, can view these costly monstrosities of vanity and uselessness, without regarding them as a repetition of the vanity of the eastern monarchs, and a revival of the relics of a barbarous age.

I hope it will not be supposed that the above remarks are intended to deter any one from the imitation of nature on a large scale, in the formation of rockeries; but it is to be hoped that this absurd kind of landscape gardening will never be carried into so ridiculous extremes in this country. Natural cropping clefts, and romantic rocky spots, may be easily turned to excellent advantage, and far excel those artificial rock gardens, at comparatively small cost; and sure enough, such spots are sufficiently numerous in this country, if wealthy men who build fine country houses, would bring themselves to choose locations where they might have trees, landscapes, and rock gardens, ready made.

R. B. L.

Remarks.—Both rockwork and artificial ponds are, in our estimation, dangerous features in ornamental gardens, for any one to meddle with who has not a great deal of taste, or a lively feeling of natural beauty and fitness. We quite agree with our correspondent, that they should occupy secluded spots in the grounds, and that they are never so successful as when they may be wholly mistaken for nature's own work. A little round pond, like a soup basin, set in an open, smooth lawn, and a pile of rocks heaped up upon a formal mound, as we have sometimes seen them, in the midst of high artificial flower garden scenery, are equally offensive to good sense and good taste. Nature puts her small pools of water, and her ledge of rocks filled with mosses and ferns, in the depths of some secluded dell, or under the shelter of some dark leafy bank of verdure.

Touching the rock garden at Chatsworth, we must differ from our correspondent. That rock garden has, to our mind, but one defect, viz: that you enter it from a highly dressed portion of flower garden scenery. For the rest, time and vegetation have now so com-

pletely harmonised it with the wild scenery of the high hills of Derbyshire, which rise behind it, and of which it seems a spur, that we will venture to say nine strangers out of ten would walk through it in the full belief that it was a natural rocky pass in the grounds, if they were not asked to wonder at it as a work of art and labor. It was probably more new and raw when Mr. L. obtained his impressions. It is hardly worth while to inquire as to the *cui bono* of such gardening fancies—for Chatsworth is not a model of rural economy, but of prodigal magnificence of landscape embellishment. Ed.

NOTES ON THE CURCULIO.

By J. F. C. H., NEWTON CENTRE, MASS.

Dear Sir—I notice you invite horticulturists and others to contribute to your valuable Journal, even rough notes of experience; accepting your invitation, I will speak of the curculio, that most uncompromising enemy of the plum.

Last year my plum trees blossomed well, as they have done for some years past, though I have not been able to raise scarcely a single perfect plum during the time; and I determined, if possible, to prevent the ravages of the curculio, at least in part. When the fruit got to be about the size of a pea, I made it a practice to shake two of the trees every morning, having a cloth under the tree, in which to catch the little "Turk;" this I continued to do until the fruit began to turn color, though I caught but few towards the last. The result was gratifying; I had a good crop of fine fruit. With another tree I proceeded as follows, though I did not commence until some of the fruit was punctured. I dusted the entire tree with air slaked lime, applying it when the dew was on, that it might adhere to the fruit; this I renewed every time it was washed off by rains, until the plums were nearly ripe; those previously punctured dropped off, but I think there were few if any injured after the first application of the lime. There was another circumstance, however, connected with this experiment, which may in part account for the preservation of the plums; hens and chickens run at large under the tree. It stood on high, dry land, the variety was "Prince's Imperial Gage."

A few words respecting warts on plum and cherry trees, and I am done.

In your last number, your correspondent, O. of Owego, says he has made some efforts to discover the insect which causes these unseemly excrescences, but thus far has failed. He further says he has tried to hatch the larvæ which is found in them, but they have soon died. Last summer, being in the garden of a neighbor, I noticed that his cherry trees were badly warted; with his permission I cut off some of these warts, and taking them home, picked out the larvæ carefully, and placed them under an inverted tumbler partly filled with earth, where in the course of ten or twelve days, more or less, (I did not note the exact time,) they became—*curculios;* soon after having passed through this transformation, they died. Whether the curculio was the cause of the excrescence in which I found it, is more than I can say; I will leave it for others to decide. I would add, in conclusion, that though my plums have nearly all been destroyed in years past, by the curculio, still I have never seen two dozen warts on any or all of my trees. Yours truly,

J. F. C. H.

Newton Centre, Mass., May 5, 1851

MR. DOWNING'S LETTERS FROM ENGLAND.

My Dear Sir—If my English letters have told you mostly of country places, and country life, it is not that I have been insensible to sight-seeing in town. London is a great world in itself. Ink enough has, however, already been expended upon it to fill the Grand Canal, and still it is a city which no one can understand without seeing it. Its vastness, its grave aspect of business, the grandeur of some parts, the poverty of others, the air of order, and the taint of smoke, that pervade it everywhere, are its great features. To an American eye, accustomed to the clear, pure, transatlantic atmosphere, there is, at first, something really repulsive in the black and dingy look of almost all buildings, whether new or old, (not painted within the last month.) In some of the oldest, like Westminster Abbey, it is an absolute covering of dirty soot. That hoary look of age which belongs to a time-honored building, and which mellows and softens all its lines and forms, is as delicious to the sense of sight as the tone of old pictures, or the hue of old wine. But there is none of this in the antiquity of London. You are repelled by the sooty exterior of all the old façades, as you would be by that of a chimney-sweep who has made the circuit of fifty flues in a morning, and whose outer man would almost defy an entire hydropathic institution.

If I have shown you the dark side of the picture of the great Metropolis, first, let me hasten to present you with some of its lights, which made a much stronger impression upon me. I mean the grand and beautiful parks of London.

If everything one sees in England leads one to the conviction that the English do not, like the French and Germans, possess the genius of high art, there is no denying that they far surpass all other nations in a profound sentiment of nature. Take, for example, the West end of London, and what do you see there? Magnificent palaces, enormous piles of dwellings, in the shape of "terraces," "squares," and "places"—the same costly town architecture that you find everywhere in the better portions of populous and wealthy capitals. But if you ask me what is the peculiar and distinguishing *luxury* of this part of London, I answer, in its holding the country in its lap. In the midst of London lie, in an almost connected series, the great parks. Hyde Park, Regent's Park, St. James' and Green Parks. These names are almost as familiar to you as the Battery and Washington Square, and I fear you labor under the delusion that the former are only an enlarged edition of the latter. Believe me, you have fallen into as great an error as if you took the "Brick meeting-house" for a suggestion of St. Peters. The London Parks are actually like districts of open country—meadows and fields, country estates, lakes and streams, gardens and shrubberies, with as much variety as if you were in the heart of Cambridgeshire, and as much seclusion in some parts, at certain hours, as if you were on a farm in the interior of Pennsylvania. And the whole is laid out and treated, in the main, with a broad and noble feeling of natural beauty, quite the reverse of what you see in the public parks of the continental cities. This makes these parks doubly refreshing to citizens tired of straight lines and formal streets, while the contrast heightens the natural charm. Unaccustomed to this breadth of imitation of nature—this creating a piece of wide-spread country large enough to shut out for the time all trace of the houses, though actually in the midst of a city, an American is always half inclined to believe, (notwithstanding the abundance of evidence to the contrary,) that the London Parks are a bit of the *native* country, surprised and fairly taken prisoner by the outstretched arms of this giant of modern cities.

St. James' Park and Green Park are enormous pieces of real pleasure-ground scenery—

with broad glades of turf, noble trees, rich masses of shrubbery and flowering plants—lakes filled with rare water-fowl, and the proper surroundings, in fact, to two royal palaces and the finest private houses in London; but still, all open to the enjoyment of hundreds of thousands daily. You look out upon the forest of verdure in Green Park, as you sit in the windows of our present minister's fine mansion in Piccadilly, astonished at the breadth and beauty of the green landscape, which seems to you more like a glimpse into one of the loveliest pleasure grounds on the Hudson, than the belongings of the great metropolis.

But the pride of London is in Hyde Park and Kensington Gardens, which, together, contain nearly 800 acres, so that you have to make a circuit of nearly *seven miles* to go over the entire circumference. If you enter Hyde Park between seven and eight in the morning, when all the world of fashion is asleep, you will fancy, after you have left the great gateways and the fine colossal statue of Achilles far enough behind you to be quite out of sight, that you have made a mistake and strolled out into the country unawares. Scarcely a person is to be seen at this time of day, unless it be some lonely foot-passenger, who looks as if he had lost his way, or his wits, at this early hour. But you see broad grass meadows with scattered groups of trees, not at all unlike what you remember on the smooth banks of the Connecticut, and your impression that you have got astray and quite out of the reach of the Metropolis, is confirmed by hearing the tinkle of sheep-bells and seeing flocks of these and other pastoral creatures, feeding quietly on the short turf of the secluded portions of the Park. You walk on till you are quite weary, without finding the end of the matter—for Kensington Garden, which is only another and a larger Park, is but the continuation of Hyde Park—and you turn back in a sort of bewildered astonishment at the vastness and wealth of a city which can afford such an illimitable space for the pleasure of air and exercise of its inhabitants.

That is Hyde Park in dishabille. Now go in again with me in the afternoon, any time during the London season, and you shall see the same place in full dress, and so altered and animated by the *dramatis personæ*, that you will hardly identify it as the locale of the solitary country ramble you took in the morning.

It is half-past four in the afternoon, and the fashionable world (who dine at seven all over England) is now taking its morning airing. If you will sit down on one of these solid-looking seats under the shadow of this large elm, you will see such a display of equipage, pass you in the course of a single hour, as no other part of the world can parallel. This broad well-macadamized carriage-drive, which makes a circuit of some 4 or 5 miles in Hyde Park, is, at this moment, fairly filled with private carriages of all degrees. Here are heavy coaches and four, with postillions and footmen, and massive carriages emblazoned with family crests and gay with all the brilliancy of gold and crimson liveries; yonder superb barouche with eight spirited horses and numerous outriders, is the royal equipage, and as you lean forward to catch a glimpse of the sovereign, the close coach of the hero of Waterloo, the servants with cockades in their hats, dashes past you the other way at a rate so rapid that you doubt if he who rides within, is out merely for an airing. Yonder tasteful turn-out with liveries of a peculiar delicate mulberry, with only a single tall figure in the coach, is the Duke of Devonshire's. Here is the carriage of one of the foreign ambassadors, less showy and lighter than the English vehicles, and that pretty phæton drawn by two beautiful blood horses, is, you see, driven by a woman of extraordinary beauty, with extraordinary skill. She is quite alone, and behind her sits a footman with his arms folded, his face as grave and solemn as stones that have sermons in them. As you express your surprise at the air of conscious "grace with which the lady drives," your London friend quietly remarks, "yes, but she is *not* a lady." Unceasingly

the carriages roll by, and you are less astonished at the numberless superb equipages or the beauty of the horses, than at the old-world air of the footmen in gold and silver lace, gaudy liveries, spotless linen and snowy silk stockings. Some of the grand old coachmen in full powdered wigs, decked in all the glory of laced coats and silken calves, held the ribbons with such a conscious air of imposing grandeur that I willingly accepted them as the tree-pœnoias, the most blooming blossoms of this parterre of equipage. It seemed to me that there may be something comfortable in thus hanging all the trappings of station on the backs of coachman and footman, if one must be bothered with such things—so that one may lean back quietly in plain clothes in the well-stuffed seat of his private carriage.

But do not let us loiter away all our time in a single scene in Hyde Park. A few steps farther on is Rotten Row, (rather an odd name for an elegant place,) the chosen arena of fashionable *equestrians*. The English know too well the pleasures of riding, to gallop on horse-back over hard pavements, and Rotten Row is a soft circle of a couple of miles, in the park, railed off for this purpose, where your horse's feet have an elastic surface to travel over. Hundreds of fair equestrians, with fathers, brothers, or friends, for companions, are here enjoying a more lively and spirited exercise, than the languid inmates of the carriages we have just left behind us. The English women *rise* in the saddle, like male riders, and at first sight they look awkwardly and less gracefully to our eyes—but you soon see that they also sit more firmly and ride more boldly, than ladies on our side of the water.

To stand by and see others *ride*, seems to me always too tantalizing to be long endured as a pastime—even where the scene is as full of novelty and variety as this. Let us go on, therefore. This beautiful stream of water, which would be called a pretty "creek" at home, is the Serpentine river, which has been made to meander gracefully through Hyde Park, and wonderfully does its bright water enhance the beauty of the verdure and the charm of the whole landscape. As we stand on the bridge, and look up and down the river, amid the rich groves and across the green lawns, the city wholly shut out by groves and plantations, how finely one feels the contrast of art and nature to be realised here.

That delicious band of music which you hear now, is in Kensington gardens, and only a belt of trees and yonder iron gate, separate the latter from Hyde Park. Let us join the crowd of persons of all ages, collected in the great walk, under the shade of gigantic elm trees, to hear the music. It is a well known air of DONIZETTI'S, and as your eye glances over the company, perhaps some five or six thousand persons, who form the charmingly grouped, out-of-door audience,(for the afternoon is a bright one,) and as you see the radiant pleasure-sparkle in a thousand happy faces, young and old, who are here enjoying a little pleasant mingling of heaven and earth, in an innocent manner, you cannot but be struck with the fact, that if there is a duty belonging to good governments, next to protecting the lives and property of the people, it is that of providing public parks for the pent up inhabitants of cities.

"Imperial Kensington" is not only more spacious and grand than Hyde Park, but it has a certain antique stateliness, which touches my fancy and pleases me more. The trees are larger and more grove-like, and the broad glades of soft green turf are of a darker and richer green, and invite you to a more private and intimate confidence than any portions of Hyde Park. The grand avenue of Elms at the farther part of Kensington Gardens, coming suddenly into it from the farther Bayswater gate, is one of the noblest geometric groves in any city, and was laid out and planted, I believe, in KING WILLIAM'S time. An avenue some hundreds of years old, is always majestic and venerable, and when it adds great extent and fine keeping, like this, is really a grand thing. And yet, perhaps,

not one American in fifty that visits Hyde Park, ever gets far enough into the depths of its enjoyment to explore this avenue in Kensington Gardens.

No carriages or horses are permitted in Kensington Gardens, but its broad glades and shadowy lawns, are sacred to pedestrians, and are especially the gambol-fields of thousands of lovely children, who, attended by their nurses, make a kind of infant Arcadia of these solemn old groves of the monarch of Dutch tastes. Even the dingy old brick Palace of Kensington, which overlooks one side of the great lawn, cannot chase away the bright dimples from the rosy faces of the charming children one sees here, and the symbols of natural aristocracy—beauty and intelligence, set upon these young faces, were to my eyes a far more agreeable study than those of accident, birth, and fortune, which are so gaudily blazoned forth in Hyde Park.

My London friend, who evidently enjoys our astonishment at the vastness of the London Parks, and the apparent display and real enjoyment they minister to, calculates that not less than 50,000 persons have been out, on foot, on horseback, or in carriages, this afternoon, and adds that upon review days, or other occasions of particular brilliancy, he has known 200,000 persons to be in Hyde Park and Kensington Gardens at once.

You may be weary of Parks to day, but I shall not allow you to escape me without a glance at Regent's Park, another link in the rural scenery of this part of London. Yes, here are *three hundred and thirty six acres* more of lawn, ornamental plantations, drives and carriage roads. Regent's Park has a younger look than any of the others in the West end of London, having only been planted about twenty-five or thirty years—but it is a beautiful surface, containing a great variety of different scenes within itself. Here are, for instance, the Royal Botanic Garden, with its rich collection of plants, and its beautiful flower-shows, which I have already described to you; and the Zoological Garden, some twenty acres in extent, where you may see almost every living animal as nearly as possible in the same circumstances as in its native country. Over the lawns walk the giraffe and camel-leopard, led by Arabs in oriental costume; among the leafy avenues you see elephants waddling along with loads of laughing, half-frightened children on their backs; down in a deep pool of water you peer upon the sluggish hippopotamus ; you gaze at the soft eyes of the gazelle as she feeds in her little private paddock, and you feed the black swans that are floating along with innumerable other rare aquatic birds, upon the surface of glassy lakes of fresh water. And "the Zoological" is just as full of people as Hyde Park, though of a totally different appearance—many students in natural history, some fashionable loungers, chiefly women, more curious strangers, and most of all, boys and girls, feeding their juvenile appetite for the marvellous, by seeing the less astonished animals fed.

And whose are those pretty country residences that you see in the very midst of another part of Regent's Park—beautiful Italian villas and ornamental cottages, embowered in trees of their own, and only divided from the open park by a light railing and belts of shrubbery? These are the villas of certain favored nobles, who have, at large cost, realised, as you see, the perfection of a residence in town, viz: a country-house in the midst of a great park, which is itself in the midst of a great city. In these favored sites the owners have the luxury of quiet, and rural surroundings, usually confined to the country, with the whole of the great world of May Fair and politics within ten or twenty minutes walk.

And now, having been through more than a *thousand acres* of park scenery, and witnessed the enjoyments of tens of thousands of persons of all classes, to whom these parks are open from sunrise to nine o'clock at night, you will naturally ask me if these luxuries are wholly confined to the West End of London. By no means. In almost all parts of

London are "squares"—open places of eight or ten acres, filled with trees, shrubs, grass and fountains—like what we call "parks" in our cities at home. Besides these, a large new space called the Victoria Park—of two hundred and ninety acres, has been laid out lately in the East part of London, expressly for the recreation and amusement of the poorer classes who are confined to that part of the town.

You see what noble breathing-places London has, within its own boundaries, for the daily health and recreation of its citizens. But these by no means comprise all the rural pleasures of its inhabitants. There are three other magnificent public places within half an hour of London, which are also enjoyed daily by thousands and tens of thousands. I mean Hampton Court, Richmond Park, and the National Gardens at Kew.

Hampton Court, is the favorite resort of the middle classes on *holidays*, and a pleasanter sight than that spot on such occasions,—when it is thronged by immense numbers of citizens, their wives and children, with all the riches of that grand old palace, its picture-galleries, halls, and splendid apartments, its two parks and its immense pleasure grounds thrown open to them, is not easily found. Indeed, a man may be dull enough to care for neither palaces nor parks, for neither nature nor art, but he can scarcely be human, or have a spark of sympathy in the fortunes of his race, if he can wander without interest through these magnificent Halls, still in perfect order, built with the most kingly prodigality by the most ambitious and powerful of subjects—WOOLSEY: halls that were afterwards successively the home of HENRY the VIII, ELIZABETH, JAMES, CHARLES and CROMWELL; halls where SHAKESPEARE played and SIDNEY wrote, but which, with all their treasures of art, are now the *people's palace* and normal school of enjoyment.

I am neither going to weary you with catalogues of pictures or dissertations upon palace architecture. But I must give you one more impression—that of the magnificent surroundings of Hampton Court. Conjure up a piece of country of diversified rich meadow surface, some five or six miles in circuit; imagine, around the palace, some forty or fifty acres of gardens, mostly in the ancient taste, with pleached alleys, (QUEEN MARY'S bower among them,) sloping banks of soft turf, huge orange trees in boxes, and a "wilderness" or labyrinth where you may lose yourself in the most intricate perplexity of shrubs; imagine an avenue a mile and a quarter long, of the most gigantic horse-chestnuts you ever beheld, with long vistas of velvet turf and highly-dressed garden scenery around them; [see FRONTISPIECE] imagine other parts of the park where you see on all sides, only great masses and groups of oaks and elms of centuries growth, and all the freedom of luxuriant nature, with a broad carpet of grass stretching on all sides; with distant portions of the park quite wild-looking, dotted with great hawthorn *trees* of centuries growth, with the tangled copse and fragrant fern which are the belongings of our own forests, and then fill up the scene in the neighborhood of the palace and gardens as I have before said, on a holiday, with thousands of happy faces, while in the secluded parts of the park the timid deer flits before you, the birds stealthily build their nests, and the insect's hum fills the silent air, and you have some faint idea of the value of such a possession for the population of a great city to pass their holidays in, or to go pic-nic-ing!

I am writing you a long letter, but the *parkomanie* is upon me, and I will not let the ink dry in my pen without a word about Richmond Great Park—also free to the public, and also within the reach of the Londoner who seeks for air and exercise. Richmond Great Park was formerly a Royal hunting ground, but, like all the parks I have mentioned, has been given up to the people—at least the free enjoyment of it. It is the largest of all the parks I have described, being eight miles round, and containing 2,250 acres. It is a piece of magnificent forest tract—open forest, with grass, tufts of hazel, thorns and

ferns, the surface gently undulating, and dotted with grand old oaks—extremely like what you see on a still larger scale in Kentucky. Its solitude and seclusion, within sight of London—are almost startling. The land is high, and from one side of it your eye wanders over the valley of Richmond—with the Thames—here only a silvery looking stream winding through it—a world-renowned view and one whose sylvan beauty it is impossible to praise too highly. Just in this part of the Park, and commanding this superb view, with the towers of Windsor Castle in the distance on one side, and the dome of St. Paul's on the other, and all the antique sylvan seclusion of the old wood around it, stands a modest little cottage—the favorite summer residence of LORD JOHN RUSSELL, the use of which has been given him by his sovereign. A more unambitious looking home, and one better calculated to restore the faculties of an over-worked premier, after a day's toil in Downing Street, it would be impossible to conceive.

I drove through Richmond Great Park in the carriage of the Belgian minister, and his accomplished wife, who was my cicerone, stopped the coachman for a moment near this place, in order that she might point out to me an old oak that had a story to tell. "It was here—just under this tree," she added, (her eyes gleaming slightly with womanly indignation as she said it,) "that the cruel HENRY stood, and saw with his own eyes, the signal made from the Tower of London, (five miles off,) which told him that ANNE BOLEYN was at that moment beheaded!" I thanked GOD that oak trees were longer lived than bad monarchs, and that modern civilization would no longer permit such butchery in a christian country.

I will close this letter with only a single remark. We fancy, not without reason, in New-York, that we have a great city, and that the introduction of Croton water, is so marvelous a luxury in the way of health, that nothing more need be done for the comfort of half a million of people. In crossing the Atlantic, a young New-Yorker, who was rabidly patriotic, and who boasted daily of the superiority of our beloved commercial metropolis over every city on the globe, was our most amusing companion. I chanced to meet him one afternoon a few days after we landed, in one of the great Parks in London, in the midst of all the sylvan beauty and human enjoyment, I have attempted to describe to you. He threw up his arms as he recognised me, and exclaimed—"good heavens! what a scene, and *I* took some Londoners to the steps of the City Hall last summer, to show them *the Park* of New-York!" I consoled him with the advice to be less conceited thereafter in his cockneyism, and to show foreigners the Hudson and Niagara, instead of the City Hall and Bowling Green. But the question may well be asked, is New-York really not rich enough, or is there absolutely not land enough in America, to give our citizens public parks of more than ten acres? Yours sincerely, A. J. D.

Domestic Notices.

State Agricultural Schools.—Just before the Legislature of the State of New-York broke up in the late abnormal manner, the bill for the Agricultural College was, at its third reading, quietly *laid on the table*—chiefly at the motion of Messrs. Varnum and Pardee, two gentlemen who we believe wish more time to consider whether it is worth while to give a farmer's son any education!

This bill, or any other for the same object, will never pass, and should never be expected to pass, till the leading farmers of the state bestir themselves a little more energetically to procure its passage. They greatly desire its passage, to be sure; they even send a petition to that effect from various parts of the state, now and then, and for the rest, they quietly pass their winter days in foddering the cows, and their evenings in reading the agricultural papers by the fireside. Meanwhile, when any other interest in the state wishes legislative aid, it makes its importance felt at Albany by the presence of constituent representatives who give no peace to law-makers till they decidedly assent or deny. Pressed by such unceasing demands by some of their constituents, and allowed almost to forget the real wants of others, it is not remarkable that the railroad bills pass, while farm-school bills are laid upon the table.

The new session of the legislature is, we understand, to be called in June. Let every agricultural society in the state but send one delegate to Albany, armed to the teeth with sharp and earnest words about farmer's rights, and the wise men at the capitol will deny them nothing. But if the farmers expect to get laws enacted for their benefit, and the good thereby of the whole country, by merely sitting still at home, and *hoping*, when all the rest of the world is as busy asserting its rights, as mid-summer bees in making honey, they are in a fog of delusion as impenetrable as Egyptian darkness.

New-Jersey is, we see, faring no better than New-York. Massachusetts has the matter of a State Agricultural School still under consideration, and judging from the signs upon the surface, there is every reason to believe that she will succeed first. Prof. Hitchcock, who visited for this special purpose all the leading farm schools in Europe last year, has made a very valuable report to the legislature, embracing all the needful statistics of these schools. Hon. M. P. Wilder, chairman of the Agricultural Committee, a host in himself, is laboring unweariedly to bring the matter to a decided action, and public meetings have been held at the state house, to develop and bring to a focus public opinion on this subject. Thus, Massachusetts, with one-fourth of the farming interest at stake, compared with New-York, will doubtless get a school to teach farming first, because her farmers are more active in asserting their rights.

Fortune's Five Colored Rose.—Messrs. Parsons & Co., of Flushing, have successfully introduced this rose. A small plant, which they had the kindness to send us lately, has produced some fine flowers, pure white, striped with red, and we trust, when older, will show its full character. Mr. Fortune, it will be remembered, brought this plant out to England from China, and his account of it—given in his travels, is the following: "Another rose, which the Chinese call five-colored, was found in the gardens; it belongs to the section commonly called China Roses in this country—but sports in a very strange and beautiful manner. Sometimes it produces self-colored blooms, being either wholly red, or French white, and frequently having flowers of both colors on one plant at the same time, while at other times the flowers are *striped* with the colors above mentioned. This will be as hardy as our common China Rose."

On inquiring of Mr. Cadness, (at Messrs. Parson's establishment,) respecting the *behavior* of this new variety in this country, we received the following note from him. Ed.

Fortune's Five Colored Rose is undoubtedly a great novelty amongst roses, but like all flowers of its character, requires nice cultivation in order to get the flowers true. We have not, as yet, we consider, paid that attention to its culture which it undoubtedly requires, having given it the same treatment as our other China and Tea Roses, and for the past year encouraged a vi-

gorous growth for a supply of wood, for cuttings, &c. Yet, under this treatment, we have had flowers beautifully marked and very perfect, being flaked and striped exactly like a carnation. The colors are very bright, and the marking very distinct and clear, and I have no doubt, that in proper soil, and under proper treatment, the character of the flowers will be permanent. It flowers more perfectly in winter and spring, but as soon as the weather becomes hot they loose their color, and often become nearly single. Another season we hope to give it a fair trial, and test its merits, and as it appears to seed very freely, I think it cannot but become valuable for hybridising, &c. Yours, C., *Flushing, N. Y., May*, 1851.

THE GOLDEN BELL SHRUB.—The new hardy shrub from China, *Forsythia viridissima*, is too gay and ornamental, and will become too popular to be commonly known by its hard botanical name, and we propose to call it Golden Bell. Blossoming before the fruit trees, and remaining in bloom for a long time, it forms the brightest embellishment of the shrubbery in early spring, and its hardiness and easy culture, will soon give it a place in every garden.

DEATH OF J. S. SKINNER.—Our venerable friend, the Editor of the PLOUGH, LOOM AND ANVIL, who was the NESTOR of the Agricultural Press, a few weeks since, met with an untimely end. No man in the country had labored so long and zealously for the improvement of Agriculture, as Mr. SKINNER, and he blended with the varied knowledge of the art he taught, a large spirit of patriotism, and a generous humanity, that gave to the various journals that were successively conducted by him, an influence far above that of their class generally. Though he had reached a good age, he was still in the full vigor of his intellectual powers. If the sentiment of gratitude for services done one's country, entitle a man's memory to be kept alive by "storied bust and monumental urn," certainly there are few whose names could be so rightly honored in this way, as the subject of this notice.

THE GIANT IVY.—We have sought for some time for a place where the genuine giant ivy could be procured in this country, and have found a quantity of well rooted plants for sale. We are sure our readers will thank us for imforming them how they can do as we have just done, viz: procure twenty healthy specimens of this invaluable and hardy and fast growing evergreen creeper, one which we are anxious to see introduced to cover every old wall, old tree, fence and house in the country.*

A letter enclosing one dollar, addressed DAVID FERGUSON, gardener, Falls of Schuykill, near Philadelphia, will insure ten fine plants grown in pots, with established roots, sent by express or as directed, to any part of the Union. It will answer to plant it at any time during the spring or summer; a position—the north side of a building, wall, &c., is best. Half the above sum will of course purchase half the number of roots. Every one in the middle states, who can get it should make trial of the giant ivy. Under favorable circumstances it will grow from 5 to 12 feet annually. It succeeds well trained on wire or iron railing, and is also one of the handsomest parlor window plants ever cultivated, bearing the air of heated apartments perfectly.

GARDENER'S COMMISSIONS.—Will you have the kindness to give a novice your opinion of the morality of a gardener receiving a discount from nurserymen for his own benefit. On finding that my gardener had purchased for me some very poor plants, I was induced to make inquiry, and found that he had been allowed a discount for his own benefit which did not appear on my bill. To my notions of mercantile correctness, this did not appear to be quite an honest transaction on the part of the nurseryman, inasmuch as it held out a temptation to the gardener to purchase where he could obtain the largest discount, or rather fee, for his custom, without regard to the interest of his employer.

As mercantile and horticultural integrity however may not be synonymous, I thought I would inquire what is the practice in this respect among nurserymen generally. I find many who are always in the habit of allowing this discount to gardeners for their own benefit, assigning as a reason that gardeners are themselves obliged to bear their own travelling expenses, and that it is no more than right that they should be paid for their custom. I find

* See an interesting essay on ivy in Vol. IV, page 252 of the Horticulturist, by one of our correspondents.

other nurserymen again, who say that it would be decidedly to their interest to induce gardeners in this way to buy of them, but that they have uniformily refused to do so, because they could not quite reconcile the transaction with their notions of integrity, and that they were also unwilling to do anything of which an employer would disapprove if he knew it.

Now this difference in practice left me still in the dark, so I wrote to an old and intimate friend in the nursery business in England, begging him to tell me what is the practice there. He says very frankly and in confidence, so I will not mention his name, that it is a uniform practice to allow such discount to gardeners, but that they generally make it up by a slight extra charge upon the plants. So I find that we novices, who do not know sufficient to purchase our own plants, are obliged to suffer in some measure.

I am half inclined to make it a rule with my next gardener, that I shall have the benefit of all the bargains he can get out of the nurserymen. In my ignorance of the rules of horticultural trade, I may however be wrong in my notions, and should like very much to have your opinion and that of gentlemen employing gardeners, as to the correctness of these things. Yours very truly, A Lover of Flowers.

Remarks—If a gentleman don't take interest enough in his garden to purchase plants himself, or won't pay his gardener's travelling expenses when he sends him to select them, he cannot fairly complain if the gardener gets his rights by a commission from the nurseryman.

But the *system* is a bad one, because it leads to a kind of premium paid by the nurserymen to get custom; the result of which is, that the gardener goes to the nursery where he can get the most commission, instead of that where the best plants and trees are to be found. Ed.

To Improve Stiff Clay Soils.—Dear Sir: Among the many useful directions and hints for the improvement of soils, which I find in four volumes of your Magazine, I see nothing that fully answers my purpose, and not having the time to seek and read other works, take the liberty to ask your advice.

It is desired to raise in a garden containing one-third of an acre, fruit, ornamental shrubs, flowers and vegetables; a very limited variety of the latter, however. The land has been under cultivation two years, having previously been mowing land. It was quite "springy," which has been remedied by deep draining. Little manure of any kind has been used—but trenching and frequent digging has been adopted—and last autumn some ten loads of fine sand were mixed with, say one-quarter of an acre of the soil, which yet remains clayey, coarse, and cakes badly on the surface after rain. The following is the result of an analysis of equal weights of loam and subsoil mixed, that being about the proportion of each in the part which I have broken up—the loam being, say a foot in depth, and the ground dug a foot deeper than that—the sub-soil turned up and mixed.

One hundred parts, (dried and mixed as above,) yield—

Insoluble earthy matters,	85.400
Organic matter,	7.800
Lime,	.224
Alumina,	3.200
Per oxide of iron,	2.300
Magnesia,	.256
Chloride of sodium, traces,	
Phosphoric acid,	.253
	99.433

I presume you will remark here a deficiency of alkalis and phosphates.

Will you oblige me with your advice as to the proper substances to be used to supply the lacking ingredients, and at the same time render the earth more friable; for after all, my plants grow pretty well if the soil is stirred as often as it is watered, but the seeds push through the surface crust with an effort that is painful to witness.

My pea patch, (sowed just before the late heavy storm,) has the baked and cracked appearance of a dried bed of mortar. In making your suggestions, will you be so good as to remember that articles which may be obtained of the dry salters are much more accessible to me than wood ashes, peat, &c., which every farmer in the country can easily obtain, but which are less abundant here than guano. Very respectfully yours, E. R. *Boston, April* 28, 1851.

We answer in brief—*burn* a portion of the clay next autumn—by which process you both

enrich and loosen the soil—as burned clay never coheres again. Then ridge up the soil before winter, digging into it a good dressing of fresh stable manure. For the process of burning clay, see Hort. vol. ii. p. 442, and vol. iii. p. 184. Ed.

A word about Early Peas.—As digging with me commenced almost with my life, and I think will only end with me in death, therefore it is natural I should have a fellow feeling for your correspondent, "An old Digger;" I have read all his letters for this two or three years past, and must say, as far as a digger is allowed to be a judge, that they are all to the point, good sound unvarnished tales, and well delivered; but I believe Jeffries paid him a pretty little compliment, but I must not undertake such things, or I may get the promise of a good shower of walking canes and umbrellas. To come to the point: *peas* are the things I wish to talk about; old Digger's method is very good in its way, and as he has been kind enough to lay it before the readers of the Horticulturist, I will in return tell you my plan.

In the first place get some weather boarding cut in about foot lengths, (longer will be unhandy,) then cut a sod the length and breadth of the board, lay it with the grass side down, let the sod be about three inches thick, (of course good old pasture sods are the best;) cut a channel down the center of the sod, sow the peas therein and cover them with good light rich soil; put them in a hot-bed frame, on a mild heat; fill all the chinks between the sods with some light soil; when the peas appear above the ground give all the air you can; when they are up about two inches remove them into a cold frame; a covering with boards in case of very bad weather will do. When the time arrives for planting, open a trench wide enough to take the sods; they will slip off the board very readily. I have grown peas for many years this way, and where I have had the convenience of vineries, where I could shift them from the first to the second or third house to harden them off, I have had them in bloom and supported by strings attached to straps nailed on to the boards. But the least trouble is some brush just strong enough to keep up the peas. I have at this time a good crop of snap-beans as well as peas grown in this way; the beans will be in flower by the time I can put them out.

This is not all I grow in this way; cucumbers, musk and water-melons, squashes, egg-plant, okra, &c. succeed equally well. I prepare the boards and sods the same as for peas and beans with this slight difference; after the long sod is laid on the board, I cut it into about five blocks and scoop out the middle. I then drop in the seeds, allowing enough for thinning. They are then treated the same as the peas; they are not taken so soon out of the hot-bed, but give them full air every day you can; when the season is far enough advanced all you have to do is to put them in the hills, sods and all, and they will never know they were forced. R. Weston. *Ashwood, Tennessee, March* 26, 1851.

Preserving Fruits Fresh.—In the February No., 1850, of the Horticulturist, you published an account of the mode of preserving fruit in tin cans, by which (those who succeeded) were to have it in all its freshness and delicacy, as if but recently plucked from the trees. Having made the attempt and signally failed, I wish to ascertain wherein I erred, so that I may make the trial again, for I would like much to be able to have by me a few cans of delicious fruits, with which either to treat a friend, or better still, to add to the comforts of the invalid. My experiment was thus conducted. I procured a number of tin cans, about six inches high by five wide, with tops to fit over, with a small hole the size of a pin in the centre. These I filled with fruit, packing them carefully, so as to have no bruised or decayed specimens. The first I tried was filled with strawberries; the others with peaches. The strawberries were carefully hand picked. The peaches were selected by myself, so as to be sure there were no specks or bruises; they were put in whole, and as some of the cans were filled with large varieties, only very few could be put in. I then had the tops carefully soldered, and following the directions given by "W." I placed them in a pot filled with hot water, which was made to boil over a gentle fire, and a drop of water was placed over the small hole to ascertain when the air was expelled, but it seemed to me to be impossible to expel it all if that was to be the test, for I kept some of the cans in the water for upwards of a half hour, and

even then the air would bubble through; thinking, however, that the fruit would be stewed, and not preserved, in the state your correspondent promised, I hermetically sealed them up, by dropping some solder on the hole—took them out, and after wiping them, put them away in cool places. Some were in the water 15 minutes, others upwards of a half hour, and one I suppose a full hour. And now for the result. On opening them, I have found the peaches pretty well stewed, and having an acid fermented taste, somewhat resembling the mixture of brandy and sugar, and not one fit to be eaten. The strawberries a mess not fit even to be tasted. Now as you have eaten fruit preserved in their fresh state, and pronounced them excellent, I am very desirous of knowing how to accomplish it, and will be exceedingly glad if you or your correspondent W., will inform me in what I erred, and give me such plain, practical directions that I may succeed in my next trial. The difficulty seems to be to expel the air completely, and yet the time I gave was sufficient to stew the fruit, and yet did not sufficiently expel the air, as indicated by its escape through the water dropped over the hole.

I shall be especially obliged to you, (or W.) if you will furnish these directions at an early day, for strawberries are now ripening, and I would like to put up a few of them, as well as peaches. Yours, &c., L. *South Carolina, March* 31, 1851.

We reply to the foregoing, (and another communication to the same effect,) by saying, that we imagine our correspondent "W." was not fully informed regarding the mode of expelling the air from the cans. We learn, on inquiry, that this is understood to be the whole mystery of preserving fruits in their fresh state—quite a large trade in which is now carried on in Baltimore and New-York—but whether the air is exhausted by means of the air pump, or by the boiling-water process—we are unable to say. The companies engaged in the trade make a *secret* of it—but it is known to "out-siders," and perhaps some of the knowing ones will send us a line on this subject. Ed.

Native Trees in Virginia.—I propose to send you a brief description of a few of the trees which we have in lower Virginia, that may be used to great advantage on lawns and elsewhere, as ornamental trees; whether your readers take enough interest in us down in "Old Virginny," to be satisfied with such a disposal of your space, is for you to decide.

The American Holly, (*Ilex opaca,*) should undoubtedly be placed first upon our list of indigenous ornamental trees. Its dense evergreen, glossy foliage, its masses of berries, so brilliant in winter, and its symmetrical shape, all tend to make it the most beautiful of our trees. It grows to some forty or fifty feet in height, but very slowly, though even as a shrub it is exceedingly beautiful; with a little care, it can be successfully transplanted.

The Forest Poplar, (*Liriodendron tulipifera.*) Deciduous—is another of our trees that no one should omit to plant in his grounds; it can be transplanted without difficulty, [only when very small,] and is of moderately rapid growth; symmetrically umbrageous, its large, deep green leaves, and tulip formed flowers render it, a most desirable addition to ornamental planting; it soon attains the height of forty or fifty feet, and eventually becomes majestic in its size.

The White Elm, *Ulmus americana.* River Elm, *U. memoralis.* Slippery Elm, *U. fulva.* Whahoo Elm, *U. alata*—deciduous trees—are all formidable rivals of the Dutch Elm, in point of beauty and grandeur, and unlike it, are free from the deplorable ravages of the insect; they are of a growth sufficiently rapid to induce even those who do not plant for posterity, to incur the trouble of removing them. The River Elm is perhaps the most ornamental of these trees, on account of the graceful weeping of its boughs; they all, except the Whahoo, attain great size.

The Red Maple, *Acer rubrum,*—deciduous—is a very showy tree, and can be readily transplanted. In the spring it is adorned with clusters of the richest scarlet pendent seed vessels, which present a most striking appearance amongst the silvery green leaves, and in the autumn the foliage assumes the most brilliant hue, rendering it a dazzling ornament to our forests; the White Maple, *Acer dasycarpum,* is also well worth planting, though not so brilliant in the color of its foliage and seed vessels, as the other.

The Box Elder, *Acer negundo,*—deciduous

—is regular in its shape, foliage dense, and of a peculiar and pleasing hue, yellowish green; readily transplanted, moderately rapid in its growth, and attains to considerable size.

The Fringe Tree, (*Chionanthus virginicus*)—deciduous—this is the finest of our shrubs. The leaf is large and dark, and in the month of May it is covered with the most delicate fringe-like flowers, of the purest white. The contrast of these deep green leaves, with the beautifully airy flowers, render it most desirable either for a lawn or shrubbery; it reaches some twenty feet in height.

The Red Bud or Judas Tree, (*Cercis canadensis*)—deciduous—is a small tree that presents a pleasing appearance through the spring and summer, but in the early spring it is without an equal; then every branch, and every part of every branch, are literally covered with the most beautiful deep pink bloom; it can be transplanted without difficulty, and will bloom at once.

I might extend this list to a much greater length, but fear that I have already taxed you too largely. Your ob't serv't, X. *Virginia, March* 8, 1851.

[All these trees are cultivated in our nurseries, and more extensively planted in the pleasure grounds of the north, than in Virginia—except the American Holly—the finest of American evergreens. Will not some clever nurseryman undertake to get up a good stock of this tree? It cannot be called tender, for it grows wild on Long Island. Ed.]

Horticulture in the Canadas.—The following letter from Col. Little, one of the most experienced horticulturists in Maine, contains some matter interesting to fruit growers at the extreme northern part of the Union, and we transfer it to our columns from the Bangor Courier. The local effects of climate must be carefully studied by the fruit-grower who would plant profitably. The Ribston pippin, the famous apple of England, is, for instance, nearly worthless in the middle states—where our Newtown pippin is in perfection—but in the colder climate of Maine and Canada is one of the finest of apples. Ed.

By the request of some of our pomological friends in this vicinity, including yourself among the rest, I give you a supplement to my "Pencillings by the Way," on the subject of horticulture in the Canadas. It hardly can be expected that a chapter on fruits alone can be made interesting to any, but those only who take a lively interest on the subject, notwithstanding its acknowledged usefulness. I now have the pleasure of stating from my own knowledge, that fruits of the richest varieties can be cultivated with success in the Canadas, and particularly at Montreal, where there is a flourishing Horticultural Society, of which Geo. Shepard and Wm. Lunn, Esqrs., are the President and Vice President. During my short stay at Montreal, I was favored with interviews with these gentlemen; also with Henry Corse, Esq., the veteran cultivator of fruits and the originator of several choice plums described in Downing's and other fruit books. When at Montreal Mr. Matheson called at my lodgings early one morning and invited me to take a seat in his carriage, saying he was going to carry me to see Mr. Lunn's fruit garden, graperies and green houses, distant about one mile, in the western suburbs of the city. On arriving at his garden, I was much surprised and very agreeably disappointed in finding so rich a display of as fine, and as highly flavored fruits as I had ever seen on the tables of the Massachusetts Horticultuaal Society in School street, Boston, though not so many varieties. His apples generally were large sized, fair and handsome. On tasting them I found them very high flavored and his trees bore bountifully. His Ribston Pippins were extra large and beautiful specimens. This variety was a great favorite of the late Dr. Vaughan, of Hallowell; of the venerable horticulturist of Orrington, and is THE apple of England.

Mr. Lunn informed me that at least 200 varieties of apples would be exhibited on the tables of their fruit fair, then to be held in three days at the famous Bonsecours Market Hall, and urged me to tarry and attend it. This I could not do, for my passage ticket was limited. His apple, pear and plum trees were all very thrifty, and all of them of the most choice varieties and well suited to the climate of Montreal. His pears and plums were mostly gathered. What remained were of excellent flavor. His grapes in open culture were two varieties only—the White Sweetwater and the Black Cluster. The trellises were well loaded with the rich clusters of these delicious fruits. But the best of the story is not yet told, for after looking through this large garden, located in a city of forty-five thousand inhabitants,—we entered his extensive graperies, in one of which the vines were loaded with the noted *Black Hamburgh* grapes, which were hanging down from the trellises in large, rich and heavy clusters throughout the building, and equalling our neighbor Hobb's best, of this city, or Dr. S. L. Goodale's, of Saco, in size, weight of the clusters and high flavor of this choicest variety of the grape catalogue. In one of his graperies were several peach trees with the fruit on them.

They were trained flat to a brick wall. We then went to the Bonsecours Market Hall and I was introduced to Mr. SHEPARD, who was, with many others, arranging his choice fruits for exhibition at the Fair.

We conversed on the subject of the best varieties of fruits, for a northern climate, for some time. I then asked the favor of them to hand me, at their earliest convenience, a catalogue of such fruits as are best suited to the climate of the Canadas. Mr. LUNN replied he would do it with pleasure, and show it to Mr. SHEPARD for his approval. He did so. Mr. SHEPARD added one or two varieties and both signed it, a copy of which I hand you with this communication.

I received from Dr. S. J. LYMAN, druggist of Place d'Armes, a letter of introduction to the venerable HENRY CORSE, Esq., a horticulturist of mark.

I rang the door-bell and Mr. CORSE, himself, invited me in and to be seated. And I think I never spent two hours more agreeably than I did with this gentleman. Were I a skillful stenographer, I should have been pleased to have pencilled down all he said to me. By his consent I did take notes of much of his conversation. I should judge he was about 70 years of age. He gave his reasons for believing we should have a succession of mild winters for many years from 1849, and thought our fruit trees would not be killed by hard winters as they have been for fifty years past. He informed me the reason he did not reply to my fruit circular, two winters since, was that he was then in England. I went with him through his fruit garden and his graperies. Among other fruits he showed me a pile of gold colored pears, as tempting as any I had witnessed in my journeys a month previously. I seldom, if ever, eat a more melting and better flavored fruit. It was the Beurre Crapaud. The trees of this variety, he said, will bear to be planted as far north as will the sugar maple. He showed me the trees and they were of large size and all of them were very thrifty to the tip end of each branch. Most of his apple and plum trees were of his own originating, and it seems to be his ambition to originate new and choice varieties. His Nota Bena Plum is as popular at Montreal as our McLaughlin is in Bangor. His grapes were chiefly of the White Sweet Water variety, in the open culture, and he said he had raised and ripened them, in some years, in the open air, and had one month to spare. His fruit garden and graperies, as a whole, are not equal to, nor so extensive as Mr. LUNN's.

I noted down the fruits he would recommend for a northern climate. They were as follows:

APPLES.—Bourassa, Fameuse or Pomme d'Neige, Pomme Grise, Corse's Orange Reinette, a native of his own garden; St. Lawrence, Corse's Seedling, a fall apple of good flavor; and the Duchess of Oldenburgh, a Russian fruit, very popular in this city.

PEARS.—Beurre Crapaud, and Holland Bergamot or Bergamotte d'Hollande, see Downing page 430.

PLUMS.—Nota Bena, Admiral, Field Marshal, Twin, Decatur, Rising Sun, Regent, Golden Globe, Sovereign and Aurora. All the above plums were originated by himself.

GRAPES.—Open culture—White Sweet Water and Black Cluster.

At Quebec I had no time to devote to horticulture; for I arrived at that city at 8 A. M. on Friday and left the next day at 5 P. M., and in the mean time rode 9 miles to the Falls of Montmorenci. I learnt however that apples and plums were raised there, and in fact I saw the fruits on the trees. Many of the fruits in this latitude of 47 are cultivated in green houses or under glass.

Green-houses are seen here in abundance. Dwarf apple, pear and other fruit trees can be walled in a green house without taking much room.

In conclusion I would say to all who intend to raise *good* fruit, that the trees must be nourished with something to cause them to thrive, such as ashes, leaves, bones of all kinds, lime, meadow muck mixed with ashes or lime, oyster and clam shells, and stable manure, that the soil be not exhausted. Will a cow in one day fill a ten quart pail with milk without good feed? Will horses and oxen perform their accustomed labor without being well fed? Certainly not. Neither can a tree yield fruit bountifully without being fed.

MONTREAL, Oct. 14th, 1850.

COL. LITTLE—*Dear Sir*—The fruit trees that appear to be the best adapted for cultivation in the climate of Montreal, in Canada, are the following, viz:

Apples.—Pomme Grise, Fameuse—every good orchard in Montreal contains a proportion of about two-thirds of these two varieties. Bourassa—an excellent apple, but does not live long, and can very seldom be trained to become a handsome tree. St. Lawrence—an excellent fruit, but does not keep long. Blinkbony—a Montreal seedling, ripe here in August, an excellent table fruit. Early Harvest, Keswick Codlin, Ribston Pippin; English Rennet—a very high flavored, large sized autumn fruit, color a greenish yellow, closely resembling the Fall Pippin. Spanish Rennet—a winter apple. Red Astrachan; King of the Pippins—a Sept. fruit, large and handsome. Rhode Island Greening; Duchess of Oldenburgh—a handsome Russian fruit.

Pears.—Passe Colmar Precelle, (probably Passe Colmar of New England,) White Beurre, Beurre d'Hiver, Summer Bon Chretien, Moor-Fowl-Egg.

Grapes.—The White Sweetwater and Black Cluster.

Plums.—Green Gage, Jefferson, Corse's Dictator, Corse's Nota Bena, Kirke's early plum, peach do., Corse's admiral, Bolmar's Washington, Violette Hative, Lucombe's Non-

such, Wellington Plum, Wilmot's early Orleans, Nectarine, but a distinct plum from the Caledonian. WM. LUNN.

I concur in the above. GEORGE SHEPARD.

NOTES ON PLUMS.—In the Horticulturist for April you publish an article from your correspondent, C. G. SCRIVERS, of Cincinnatti, on the Gen. Hand Plum. After reading your former notice, (with a drawing attached,) I discovered that you had fallen into an error when you supposed that it originated with Mr. SINCLAIR of Md., and had written out an article on the subject, but being very busy, had neglected to send you a copy previous to the publication alluded to above.

Your correspondent gives the true origin, &c., of this plum, as I received it from Mr. SAMUEL CARPENTER, of Lancaster, Ohio, and the notice I first sent you from Ohio in relation to the Gen. Hand Plum, its bearing qualities, size, &c., was predicated upon a tree upon the lot of Mr. S. CARPENTER, grown from one of the grafts received from his brother in Penn.

In relation to the Montgomery Plum, I have only to say, that I have as repeatedly seen the fruit and eaten of it, as I have the Gen. Hand, and it is all your correspondent says about it, only that it is called the Montgomery *Prune*, instead of plum, by Mr. CARPENTER.

There is another plum grown by Mr. C. which he ranked, I believe, as superior to either the above, and which he called the "Ground-acre." It is not so large as either the above, but I believe superior in flavor. I have a few trees of each of these plums, brought with me from Ohio, and thinking you would like to test the Mongomery Prune, I have sent you this day a scion of the same. The Ground-acre is far too advanced to cut you a scion for grafting this spring.

If the above is of any service to you, use it as you deem proper. I always think that we cannot have too much light on any new fruit, and I could have given you all the information in relation to these plums when I first noticed the Gen. Hand Plum, as well as now, if I had then felt its importance equally as much.

As soon as the busy season is over I will notice the "*Primate*" apple, or as it is dubbed by some, the "*Rough and Ready*," and show when brought into the country and by whom, &c. &c. I regret for the cause of pomology, that men should pick up a fruit and suppose it a seedling at once, and dub it with a new title, and send it forth, saying it must be a seedling, because Messrs. THOMAS and BARRY do not know it. A sage conclusion truly, showing how easily and upon how trifling a foundation a man will form an opinion, and then promulgate the same, for although Mr. BARRY did not know the fruit, it is growing within a very short distance of Rochester. We have names enough for apples if the original ones could be kept sacred, and not re-christened so often.

It is this that creates such confusion in Pomology, and against which we cannot guard too much, and with you I will war continually to suppress it.

We have a seedling Tea Rose raised by myself, light straw with deeper centre, exquisitely fragant, large size and full double, much like Lamarque, but more compact. It is an acquisition. I will send you a plant after a while, and will leave the opinion of its merits to your unbiassed judgment. A. FAHNESTOCK. *Syracuse, April* 14, 1851.

FINE STRAWBERRY CROP.—Allow me to add one to the numerous accounts of large crops of that excellent fruit, the Strawberry.

In the spring 1849, I selected a small patch of ground 8 by 18 feet for a bed. It was nothing better than common garden soil, which in the spring of '48 had been trenched one spit deep, turning under plenty of stable manure. I gave it a top-dressing of well rotted manure, plaster and charcoal dust which had laid in the air and weather two or three years.

I planted my strawberry roots (Black Prince, originally from A. SAUL & Co., Newburgh,) in rows eighteen inches apart and two feet in the rows. Every plant lived and grew finely. I allowed all the runners to take root, and the next spring ('50) the bed was a complete mat of vines strong and thrifty.

The first picking was twenty-one quarts; the next was lost by rotting before fairly ripening, owing to the excessively warm rainy weather at that time, probably as many as ten quarts rotted on the ground; however, what we actually picked and measured amounted to *thirty quarts*, from the bed 8 by 18 feet. As for size they would compare favorably with any I have

seen, beingly uniformly large. Yours respectfully, BUTLER SHELDON. *Auburn, March,* '51.

CINCINNATI HORT. SOCIETY.—At the recent annual meeting an election was held, at which the following officers were selected for the ensuing year:

A. H. ERNST, President; Wm. Resor, M. S. Wade, N. B. Shaler, Vice-Presidents; Jno. A. Warder, Rec. Sec.; Geo. Graham, Cor. Sec.; Wm. Resor, Treasurer.

Executive Council.—Jno. P. Foote, M. McWilliams, Wm. Orange, S. S. Jackson, G. Sleath, Jos. Longworth and S. Mosher.

STANDING COMMITTEES FOR THE YEAR.

Fruits.—M. Mc. Williams, M. S. Wade, S. M. Carter, Wm. Orange, Jno. G. Anthony.

Flowers.—N. B. Shaler, Jas. Hall, Robert Neale, Chas. Patton, Thos. Salter.

Vegetables.—John P. Foote, A. Worthington, Rob't. M. Moore, Geo. Graham, Henry Ives.

Library.—Jno. P. Foote, Jno. A. Warder Jno. G. Anthony.

ADRIAN, (Mich.) HORT. SOCIETY.—At a recent meeting of the citizens of Adrian, a Horticultural Society was formed, and D. K. UNDERWOOD was chosen President; L. G. Berry Vice-President; P. Raymond, Treasurer; F. R. Stebbins Secretary.

ROME HORT. SOCIETY.—At a meeting of gentlemen interested in Horticultural operations, held April 19th, a Horticultural Association was formed; and the following officers were elected for the present year: President, EDWARD HUNTINGTON; Vice President, H. C. Vogell; Secretary, C. P. Grosvenor; Treasurer, J. A. Dudley; Trustees, Alva Mudge, Jay Hatheway, J. Stryker, Hervey Brayton, B. Leonard.

Answers to Correspondents.

FRUIT TREE SEEDS.—*D. A. Carley,* (Dundee, Ill.) Pour some milk-warm water over the apple, pear and other seeds, lately received by you in a dry state; let it stand a quarter of an hour, then pour hot water, (just so hot that you can barely keep your hand in it,) over them, and let it remain an hour. Then plant them. If you can cover the drills in which you plant, (after you have covered the seeds to the usual depth—half an inch)—with about half an inch of spent tan, or what is much better, very rotten manure, or decayed leaf mould from the woods, you will greatly promote their vegetation and after-growth. The seeds that are in pomace should be separated from it by washing, and it would have been much better done last fall than now. Afterwards, plant in the same way. The wild plum, crab and thorns which you speak of, will answer pretty well as stocks; but they do not generally do so well as seedling stocks more akin to the sorts to be worked on them.

BOOKS.—*D. M. J.,* (Carlisle, Pa.) The best general treatise is Loudon's Encyclopedia of Gardening. For hardy garden culture, Loudon's Suburban Horticulturist. Buist's Flower Garden Directory will give you much useful and practical information on the culture of hothouse and green-house plants. (Your other queries are answered by letter.) *A Subscriber,* (Mount Pleasant, Iowa.) Procure Buist's Flower Garden Directory, and our Fruit Trees of America, which will give you the desired information.

SPECIAL CULTURE. — *Rachel W. Morris.* (Wellsboro.) The curled leaves and unhealthy habit of the snow balls, of which you complain, are the work of an insect. It is perhaps too late to effectually get rid of the trouble this season—but if you will manure the plants thoroughly next fall, cut out all the old wood, and prune and shorten back the new shoots till the plants are pretty thin and open, and then, as soon as the leaves begin to unfold, shower them once a week for three weeks, with tobacco water, you will get rid of the pest—and once well rid of it, you will probably have no further trouble. Left in undisturbed possession, it lays its eggs and provides a new colony of depredators every season. Your heliotropes, probably, do not flower in winter, because you plant them out and allow them to bloom all summer. To bloom well in winter, they should be kept in pots all the year, and shifted in fresh soil in September—so as to make new growth when you wish them to bloom. *A. S.,* (Iowa.) Box *may* be readily propagated from *seed,* but we never heard of any being produced in this country. Few plants, however, grow so freely from slips, if you will only take pains to *pound* the earth quite hard about the base of the cuttings when you plant them.

DURABLE WASH FOR BRICK WALLS.—*W. Riley,* (Alma, O.) The best wash for brickwalls is the following. Take a barrel, and slake in it carefully, with boiling water, half a bushel of

fresh lime. Then fill the barrel two thirds full of water, and add 1 bushel of hydraulic lime or water cement. Dissolve in water and add 3 pounds of sulphate of zinc, (white vitriol,) stirring the whole to incorporate it thoroughly. The wash should be of the consistency of thin paint, and may be laid on with whitewash or other brush. The color is pale stone color—nearly white. If you wish it to be straw color add yellow ochre, 2 pounds in powder; if drab, add 4 pounds raw umber. For other cheap paints and washes, see our work, "Country Houses," part first, (which may be had separately,) page 186.

Miscellaneous.—*W. R.*, (Ibid.) Buckthorn for hedges may be had at any of the large nurseries at the north, for $5.00 or $6.00 per 1,000. The three most profitable late apples for you will probably be the Roxbury Russet, Pryor's Red, and if your soil is rich and deep, Newtown Pippin. Plums should be whip or splice grafted—they take root but poorly if cleft grafted. *Blackberries.—A. R.*, (Oswego, N. Y.) The common blackberry might be immensely improved by selecting the very largest fruits and planting the seeds in the garden, giving the seedlings high cultivation, then selecting the seeds of their largest fruit and planting again. There is no doubt, from the known tendency of this genus of plants to improve by culture, that blackberries, three times the size of the native sort, and far superior in flavor, might be easily originated in this way. *Large Currants.—W. Silsby*, (Boston.) The Dutch Currant only needs rich soil and thinning of the branches to produce fine fruit—but if you wish to have it in the greatest perfection, plant some bushes, one year old from the cutting, in deep rich soil, on a *north* wall or building, and *train* the branches just as you would those of any vine. The size and beauty of the fruit will be greatly increased, and you may extend the branches over a large space.

Late Transplanting.—*H. B. R.*, (Germantown, Pa.) Shrubs and trees of moderate size may be safely removed, if needful, even when in full leaf, in this manner. Dig a trench carefully round the tree, so as to leave a good ball of earth—not inconvenient to manage, about the principal part of the roots. The trench should be as narrow as your spade will permit you to make it. Fill the trench with water—and let it stand for 12 hours, till the water has saturated the ball and soaked away. Then fasten a piece of coarse cloth or matting about the ball—for it will adhere in a mass, lift it out of the hole, and transplant it, tree and all. In this way we have seen pretty good sized trees removed with perfect success, even in mid-summer.

Vineries.—*An Old Subscriber*, (Philadelphia.) Your grapes fail from the want of nutriment. The best thing you can do, at this late time, is to fork up the border and water it plentifully once a week during the season, except in very rainy weather, with liquid manure. Do not syringe when the vines are in full flower—but keep the house moist by sprinkling the floor once or twice a day.

Water Pipes.—*Geo. Howland, jr.*, (New-Bedford.) We do not know where the iron pipe glazed inside can be obtained. Lead pipe *tinned inside* answers well for conveying water for domestic uses, and may be had of any of the wholesale dealers in Boston or New-York.

Sale of Improved Cattle.—L. G. Morris's great sale of improved domestic animals, takes place on the 24th inst. For further particulars see his advertisement. Catalogues can be obtained from Mr. Morris. If required to be sent by mail, the postage will be pre-paid.

TRAILING ARBUTUS.

Darlings of the forest!
Blossoming alone
When Earth's grief is sorest
For her jewels gone—
Ere the last snow drift melts, your tender buds have blown.

Tinged with color faintly,
Like the morning sky,
Or more pale and saintly,
Wrapped in leaves ye lie,
Even as children sleep in faith's simplicity.

There the wild wood-robin
Hymns your solitude,
And the rain comes sobbing
Through the budding wood.
While the low south wind sighs, but dare not be more rude.

Were your pure lips fashioned
Out of air and dew;
Starlight unimpassioned;
Dawn's most tender hue;
And scented by the woods that gathered sweets for you?

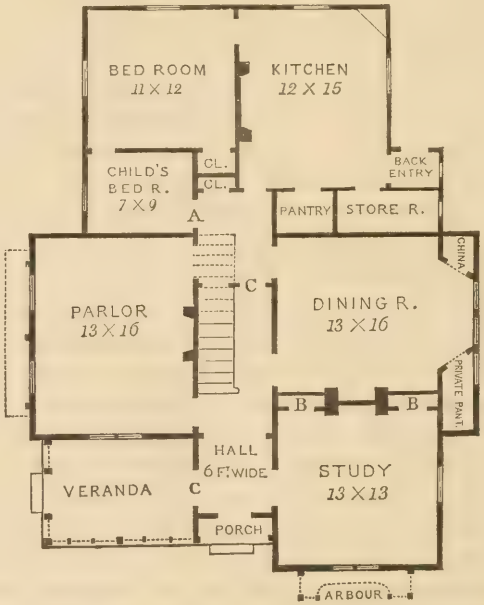
Fairest and most lonely,
From the world apart,
Made for beauty only,
Veiled from Nature's heart,
With such unconscious grace as makes the dream of Art

Were not mortal sorrow
An immortal shade,
Then I would to-morrow
Such a flower be made,
And live in the dear woods where my lost childhood played.

A. W. H.

(*Tribune.*)

Design for a Cottage for a Country Clergyman.



PLAN OF PRINCIPAL FLOOR.

Hort: July, 1851.

THE

Horticulturist,

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

A Few Words on Fruit Culture.

BY far the most important branch of horticulture at the present moment in this country, is the cultivation of Fruit. The soil and climate of the United States are, on the whole, as favorable to the production of hardy fruits as those of any other country—and our northern states, owing to the warmth of the summer and the clearness of the atmosphere, are far more prolific of fine fruits than the north of Europe. The American farmer south of the Mohawk, has the finest peaches for the trouble of planting and gathering—while in England they are luxuries only within the reach of men of fortune, and even in Paris, they can only be ripened upon walls. By late reports of the markets of London, Paris and New-York, we find that the latter city is far more abundantly supplied with fruit than either of the former—though finer specimens of almost any fruit may be found *at very high prices*, at all times, in London and Paris, than in New-York. The fruit grower abroad, depends upon extra size, beauty, and scarcity for his remuneration, and asks, sometimes, a guinea a dozen for peaches, while the orchardist of New-York will sell you a dozen *baskets* for the same money. The result is, that while you may more easily find superb fruit in London and Paris than in New-York—if you can afford to pay for it—you know that not one man in a hundred tastes peaches in a season, on the other side of the water, while during the month of September, they are the daily food of our whole population.

Within the last five years, the planting of orchards has, in the United States, been carried to an extent never known before. In the northern half of the Union, apple trees, in orchards, have been planted by thousands and hundreds of thousands, in almost every state. The rapid communication established by means of railroads and steamboats in all parts of the country, has operated most favorably on all the lighter branches of agriculture, and so many farmers have found their orchards the most profitable, because least expensive part of their farms, that orcharding has become in some

parts of the west, almost an absolute distinct species of husbandry. Dried apples are a large article of export from one part of the country to another, and the shipment of American apples of the finest quality to England, is now a regular and profitable branch of commerce. No apple that is sent from any part of the Continent will command more than half the price in Covent Garden market, that is readily paid for the Newtown Pippin.

The pear succeeds admirably in many parts of the United States—but it also fails as a market fruit in many others—and, though large orchards have been planted in various parts of the country, we do not think the result, as yet, warrants the belief that the orchard culture of pears will be profitable generally. In certain deep soils—abounding with lime, potash and phosphates, naturally, as in central New-York, the finest pears grow and bear like apples, and produce very large profits to their cultivators. Mr. PARDEE'S communication on this subject, in a former number, shows how largely the pear is grown as an orchard fruit in the state of New-York, and how profitable a branch of culture it has already become.

In the main, however, we believe the experience of the last five years has led most cultivators—particularly those not in a region naturally favorable in its soil—to look upon the pear as a tree rather to be confined to the fruit-garden than the orchard ; as a tree not so hardy as the apple, but sufficiently hardy to give its finest fruit, provided the soil is deep, the aspect one not too much exposed to violent changes of temperature. As the pear tree, (in its finer varieties,) is more delicate in its bark than any other fruit tree excepting the apricot, the best cultivators now agree as to the utility of sheathing the stem from the action of the sun all the year round—either by keeping the branches low and thick, so as to shade the trunk and principal limbs—the best mode—or by sheathing the stems with straw—thus preserving a uniform temperature. In all soils and climates naturally unfavorable to the pear, the culture of this tree is far easier upon the quince stock than upon the pear stock ; and this, added to compactness and economy of space for small gardens, has trebled the demand for dwarf pears within the last half dozen years. The finest pears that make their appearance in our markets, are still the White Doyenne, (or Virgalieu,) and the Bartlett. In Philadelphia the Seckel is abundant, but of late years the fruit is small and inferior, for want of the high culture and manuring which this pear demands.

If we except the neighborhood of Rochester and a part of central New-York—(probably the future Belgium of America, as regards the production of pears,) the best fruit of this kind yet produced in the United States, is still to be found in the neighborhood of Boston. Neither climate nor soil are naturally favorable there, but the great pomological knowledge and skill of the amateur and professional cultivators of Massachusetts, have enabled them to make finer shows of pears, both as regards quality and variety, than have been seen in any part of the world. And this leads us to observe that the very facility with which fruit is cultivated in America—consisting for the most part only in planting the trees, and gathering the crop—leads us into an error as to the standard of size and flavor attainable generally. One half the number of trees well

cultivated, manured, pruned, and properly cared for, annually, would give a larger product of really delicious and handsome fruit, than is now obtained from double the number of trees, and thrice the area of ground. The difficulty usually lies in the want of knowledge and the high price of labor. But the horticultural societies in all parts of the country, are gradually raising the criterion of excellence among amateurs, and the double and treble prices paid lately by confectioners for finely-grown specimens, over the market value of ordinary fruit, are opening the eyes of market growers to the pecuniary advantages of high cultivation.

Perhaps the greatest advance in fruit growing of the last half dozen years, is in the culture of foreign grapes. So long as it was believed that our climate, which is warm enough to give us the finest melons in abundance, is also sufficient to produce the foreign grape in perfection, endless experiments were tried in the open garden. But as all these experiments were unsatisfactory or fruitless, not only at the north but at the south—it has finally come to be admitted that the difficulty lies in the variableness, rather than the want of heat, in the United States. This once conceded, our horticulturists have turned their attention to vineries for raising this delicious fruit under glass—and at the present time, so much have both private and market vineries increased, the finest Hamburgh, Chasselas, and Muscat grapes, may be had in abundance at moderate prices, in the markets of Boston, New-York and Philadelphia. For a September crop of the finest foreign grapes, the heat of the sun accumulated in one of the so called cold vineries—(i. e.—a vinery without artificial heat, and the regular temperature insured by the vinery itself,) are amply sufficient. A cold vinery is constructed at so moderate a cost, that it is now fast becoming the appendage of every good garden, and some of our wealthiest amateurs, taking advantage of our bright and sunny climate, have grapes on their tables from April to Christmas—the earlier crops forced —the late ones slightly retarded in cold vineries. From all that we saw of the best private gardens in England, last summer, we are confident that we raise foreign grapes under glass in the United States, of higher flavor, and at far less trouble, than they are usually produced in England. Indeed, we have seen excellent Black Hamburghs grown in a large pit made by covering the vines trained on a high board fence, with the common sash of a large hot-bed.

On the Ohio, the native grapes—especially the Catawba—have risen to a kind of national importance. The numerous vineries which border that river, particularly about Cincinnati, have begun to yield abundant vintages of pure light wine, which takes rank with foreign wine of established reputation, and commands a high price in the market. Now that the Ohio is certain to give us Hock and Claret, what we hear of the grapes and wine of Texas and New-Mexico, leads us to believe that the future vineyards of New-World Sherry and Madeira may spring up in that quarter of our widely extended country.

New-Jersey, so long famous for her prolific peach orchards, begins to show the effects of a careless system of culture. Every year, the natural elements of the soil needful to the production of the finest peaches, are becoming scarcer and scarcer, and

nothing but deeper cultivation, and a closer attention to the inorganic necessities of vegetable growth, will enable the orchardists of that state long to hold their ground in the production of good fruit. At the present moment, the peaches of Cincinnati and Rochester are far superior, both in beauty and flavor, to those of New-York market —though in quantity the latter beats the world. The consequence is, that we shall soon find the peaches of Lake Ontario outselling those of Long-Island and New-Jersey in the same market, unless the orchardists of the latter state abandon *Malagatunes* and the *yellows*, and shallow ploughing.

The fruit that most completely baffles general cultivation in the United States, is the plum. It is a tree that grows and blossoms well enough in all parts of the country—but almost everywhere it has for its companion the curculio, the most destructive and the least vulnerable of all enemies to fruit. In certain parts of the Hudson, of central New-York, and at the west, where the soil is a stiff fat clay, the curculio finds such poor quarters in the soil, and the tree thrives so well, that the fruit is most delicious. But in light, sandy soils its culture is only an aggravation to the gardener. In such sites, here and there only a tree escapes, which stands in some pavement or some walk forever hard by the pressure of constant passing. No method has proved effectual but placing the trees in the midst of the pig and poultry-yard—and notwithstanding the numerous remedies that have been proposed in our pages since the commencement of this work, this proves the only one that has not failed more frequently than it has succeeded.

The multiplication of insects seems more rapid, if possible, than that of gardens and orchards in this country. Everywhere the culture of fruit appears, at first sight, the easiest possible matter, and really would be, were it not for some insect pest that stands ready to devour and destroy. In countries where the labor of women and children is applied, at the rate of a few cents a day, to the extermination of insects, it is comparatively easy to keep the latter under control. But nobody can afford to catch the curculios and other beetles at the price of a dollar a day for labor. The entomologists ought, therefore, to explain to us some natural laws which have been violated to bring upon us such an insect scourge—or at least point out to us some cheap way of calling in nature to our aid, in getting rid of the vagrants. For our own part, we fully believe that it is to the gradual decrease of small birds—partly from the destruction of our forests, but mainly from the absence of laws against that vagabond race of unfledged sportsmen who shoot sparrows when they ought to be planting corn, that this inordinate increase of insects is to be attributed. Nature intended the small birds to be maintained by the destruction of insects, and if the former are wantonly destroyed, our crops, both of the field and gardens, must pay the penalty. If the boys must indulge their spirit of liberty by shooting *something* innocent, it would be better for us husbandmen and gardeners to subscribe and get some French masters of the arts of domestic sports, to teach them how to bring their light artillery to bear upon Bull-frogs. It would be a gain to the whole agricultural community—of more national importance than the preservation of the larger birds by the game laws.

We may be expected to say a word or two here respecting the result of the last five years on pomology in the United States. The facts are so well known that it seems hardly necessary. There has never been a period on either side of the Atlantic, when so much attention has been paid to fruit and fruit culture. The rapid increase of nurseries, the enormous sales of fruit trees, the publication and dissemination of work after work upon fruits and fruit culture, abundantly prove this assertion. The pomological congress which held its third session last year in Cincinnati, and which meets again this autumn in Philadelphia, has done much, and will do more towards generalising our pomological knowledge for the country generally. During the last ten years almost every fine fruit known in Europe has been introduced, and most of them have been proved in this country. The result, on the whole, has been below the expectation; a few very fine sorts admirably adapted to the country; a great number of indifferent quality; many absolutely worthless. This, naturally, makes pomologists and fruit growers less anxious about the novelties of the nurseries abroad—and more desirous of originating first rate varieties at home. The best lesson learned from the discussions in the Pomological Congress—where the experience of the most practical fruit growers of the country is brought out—is, that for every state, or every distinct district of country, there must be found or produced its improved indigenous varieties of fruit—varieties born on the soil, inured to the climate, and therefore best adapted to that given locality. So that after gathering a few kernels of wheat out of bushels of chaff, American horticulturists feel, at the present moment, as if the best promise of future excellence, either in fruits or practical skill, lay in applying all our knowledge and power to the study of our own soil and climate, and in helping nature to perform the problem of successful cultivation, by hints drawn from the facts immediately around us.

A GLIMPSE AT THE GARDENS OF RIO.

BY W. J. H., LOCK-HAVEN, PA.

Dear Horticulturist—Allow a new but gratified subscriber to encumber a few pages of your incomparable monthly, in endeavoring to describe some of the beauties of a tropical climate, as seen during a recent voyage round the world.

Brazil is beyond doubt the loveliest country on this continent, and I think can scarcely be surpassed by any other in the world. Rio de Janeiro, with a motley population of two hundred thousand, boasts, and justly too, of her public and private gardens, but it is of the former we are about to write. They are called the *Imperial* and the *Botanical Gardens*, and are greatly resorted to by the citizens, who are real lovers of nature; and a stranger is told here, as they are by the Italians "who has not seen Rome, (i.e. in Rio the gardens) has seen nothing." They are indeed well worth a visit, and I shall never forget the impression they made on me when I saw them for the first time, having just left our snow-clad country, and our friends shivering in a March wind, to be thus suddenly translated to this earthly paradise.

Having selected a carriage, from the hundreds congregated about the palace, the driver,

or more properly postillion, being remarkable for his gaudy livery and big boots, our sable Jehu was persuaded to transfer himself from a recumbent position inside the carriage, to his saddle, and after some delay, off we started, our ponderous vehicle rolling under the arches of the imperial dwelling, which spans the Rua Direta. Soon after leaving the palace, the magnificent bay of Boto Fago suddenly burst upon our view, its large waves rolling on the snow-white strand with a sudden roar. Then we drove through street after street, every now and then catching a glimpse of small but beautiful bays, until we came again to the beach, while the small sail boats at a distance, danced and bobbed like white sea fowls.

Corcovado Peak soon was seen rearing his sharp and lofty head to the clouds, and at whose base lay the Botanical Gardens, surrounded by an impenetrable hedge, teeming with small white flowers. On entering we came across large beds of the tea plant, and beyond, were rows and groups of majestic trees both foreign and indigenous; bread fruit, cocoa nut, clove, cinnamon, (I omit scientific names) and hundreds of others. Then on each side of the white and smoothly rolled walks, stood rows of the stately palm, with their rings showing each years growth, and between them, golden pine apples nestling in the bosom of their long green leaves. After spending several hours in this beautiful place, we were shown into an adjoining garden devoted to the culture of oranges, lemons, limes, plantains and bananas. A more lovely spot than these gardens does not exist on this continent, and after spending days of admiration and botanical delight in them, I feel that I can never do them justice in any description. Groups of bambo, nodding in solemn and *oriental* grandeur, greatly diversified the picture, with their refreshing greenness.

Delightful cool summer houses, pavillions, and rustic retreats, shaded with the richest climbing evergreens, and covered with myriads of gorgeous flowers, of all the colors of the rainbow; playful sparkling fountains, reflecting the golden lines of a tropical sun; murmuring rivulets, flowing peacefully over pebbles and shells, then leaping down in minature cascades, and dashing off to be lost in a beautiful thicket of laurels, make up the *ensemble* of this enchanting scene.

Parts only of these lovely gardens are kept in good order, some portions being left in a state of nature, and utter neglect. A more romantic spot I never saw, and my mind unconsciously transferred me to those scenes so beautifully described by the ancient classical authors, and good old FENELON, and all that seemed to be wanting, were the nymphs, and mermaids, the dryads and fauns, to give more animation to the groves and streams.

Yours, &c. W. J. H.

Lock Haven, Pa.

TREE PÆONY GARDENS IN CHINA.

BY R. FORTUNE.

LEAVING the south garden described in my last letter, I walked onwards to the Moutan Nurseries. They are situated near the village of Fa-who, about five or six miles west of Shanghae, and in the midst of an extensive cotton country. On the road I met a number of Coolies, each carrying two baskets filled with Moutans in full flower, which were on their way to the markets for sale. When I reached the gardens I found many of the plants in full bloom, and certainly extremely handsome. The purple and lilac-colored kinds were particularly striking. One, a very dwarf kind, and apparently a distinct spe-

cies, had finely cut leaves, and flowers of a dark velvety purple, like the Tuscany Rose of our gardens. This the Chinese call the "black" Moutan, and I believe it is the same which Dr. Lindley has described in the Journal of the Horticultural Society, and named P. atrosanguinea. Another kind called the "tse," or purple, has double flowers of a large size: this is probably the variety reported to have 1000 petals, and which is said to exist only in the garden of the Emperor. The third is called the "lan," or blue: this is a lilac variety, with flowers of the color of Glycine sinensis. There are others of various shades of purple, perfectly distinct from these, and equally fine.

The double whites are also numerous and handsome. The largest of these Dr. Lindley has named P. globosa, but there are four or five others nearly as large and double. Some of them have a slight lilac tinge, which gives a richness to the color. The most expensive is one called "wang," or yellow, by the Chinese: it is a straw-colored variety, rather pretty, but not so handsome as some of the others.

The reds, (Hong,) are also numerous. Curious enough, those kinds which are common in Canton and England, are rare here. There are about half a dozen of new varieties of reds in these gardens: one of them, called "Van-yang-hong" by the Chinese, is the finest flower I ever saw. The flowers are of a clear red color, unlike any of the others, perfectly double, and each measures about ten inches across. Altogether I numbered about thirty distinct varieties in these gardens.

Nearly all these fine varieties of the Moutan are quite unknown in Canton. This may seem strange in a country where the people are proverbially fond of flowers, but the Chinese are so machine-like in all their movements, that after a little acquaintance with them, we cease to wonder at the apparent anomaly. The fact is, the Canton gardens are supplied with Moutans by another district, which lies much farther to the west than Shanghae. From time immemorial the same gardens have supplied these flowers; they came always by the same road, and at the same time of the year. Shanghae, until the close of the last war, never seems to have had any connection with Canton, in so far as flowers were concerned, consequently these fine varieties of the Tree Pæony never found their way to the south, and from thence to Europe.

The Moutan gardens are numerous, but each is upon a very small scale. They look more like cottage gardens than anything else, and are managed in the same way as gardens of this description generally are, namely, by the members of the family. The female part of the community seem to take as much interest in the business as the males, and are very avaricious and fond of money. I invariably found I had to pay higher prices for the plants when they were consulted on the matter. The soil of these gardens is a rich loam, well manured, and thus rendered lighter in texture than that of the surrounding country in which the cotton grows.

The propagation and management of the Moutan seems to be perfectly understood by the Chinese at Shanghae, much better than it is in England. Our nurserymen always complain that they cannot propagate it with facility, and consequently this fine flower is invariably high in price. I will tell you how the Chinese manage the business, in order that your nursery readers may give the system a trial.

In the beginning of October large quantities of the roots of a herbaceous Pæony* are seen heaped up in sheds and other outhouses, and are intended to be used as stocks for the Moutan. The bundle of tubers which forms the root of a herbaceous Pæony is pulled to pieces, and each of the finger-like rootlets forms a stock upon which the Moutan is destined to be grafted. Having thrown a large number of these rootless upon the potting

* A variety with small single flowers.

bench, the scions are then brought from the plants which it is desirable to increase. Each scion used is not more than one and half or two inches in length, and is the point of a shoot formed during the bygone summer. Its base is cut in the form of a wedge, and inserted in the crown of the finger-like tuber just noticed. This is tied up or clayed round in the usual way, and the operation is completed. When a large number of plants have been prepared in this manner, they are taken to the nursery, where they are planted in rows about a foot and a half apart, and the same distance between the rows. In planting, the bud or point of the scion is the only part which is left above ground; the point between the stock and scion, where the union is destined to take place, is always buried beneath the surface. Kæmpfer states that the Chinese propagate the Moutan by budding; but this must have been a mistake, as budding is never practiced in the country, and is not understood. He was probably deceived by the small portion of scion which is employed, and which generally has only a single bud at its apex.

Many thousands of plants are grafted in this manner every autumn, and the few vacant spaces which one sees in the rows, attests the success which attends the system; indeed, it is rare that a graft fails to grow. In about a fortnight the union between the root and the scion is complete, and in the following spring the plants are well established and strong. They frequently bloom the first spring, and are rarely later than the second, when they are dug up and taken to the markets for sale, in the manner I have described. When each has only one stem and one flower bud, it is of more value in the eyes of the Shanghae nurserymen, than when it becomes larger. In this state it is more saleable, it produces a very large flower, and it is easily dug up and carried to the market. I could always buy large plants at a cheaper rate than small ones, owing to these circumstances.

In the gardens of the Mandarins it is not unusual to meet with the Tree Pæony of great size. There was one plant near Shanghae which produced between 300 and 400 blooms every year. The proprietor was as careful of it as the Tulip fancier is of his bed of Tulips. When in bloom it was carefully shaded from the bright rays of the sun by a canvas awning, and a seat was placed in front on which the visitor could sit down and enjoy the sight of its gorgeous flowers. On this seat the old gentleman himself used to sit for hours every day, smoking pipe after pipe of tobacco, and drinking cup after cup of tea, while all the time he was gazing on the beauties of his favorite "Moutan wha." It was certainly a noble plant, and well worthy of the old man's admiration; long may he live to sit under his awning and enjoy such a sight.—*Gardeners' Chronicle.*

THE PHILOSOPHY OF DEW.

BY M. MELLONI.

[THERE are few more beautiful processes in nature than the formation of dew, and few which are so generally misunderstood—"The *falling* dew" being in fact only a piece of pure poetry. The following interesting explanation by M. MELLONI, a European savan of distinction, is the latest and best that we have seen. It was originally published in the *Compte Rendus*, in a more elaborate form, but has been condensed and translated by Dr. LINDLEY, in the following letters. ED.]

FIRST LETTER.

FROM the experiments undertaken by Wells to explain the true cause of dew, it seems quite clear, I think, that dew neither rises from the earth nor falls from the sky, but is

formed by the elastic and invisible vapor which is present everywhere in the atmosphere; the precipitation of aqueous vapor is clearly owing to the cold produced by the radiation of bodies towards a clear sky. Looking at the question in this way, leaves, wood, glass, varnish, lampblack, become covered with dew, because they emit heat easily, and are considerably cooled under a clear sky. Metals, on the other hand, remain dry, in consequence of the difficulty they have in radiating their heat to the upper regions of the atmosphere; and, in fact, a great difference is observed between the indications of a thermoscope, when a vessel of polished metal, full of boiling water, and an exactly similar one coated with lampblack, are successively presented to it; the action of the second being much greater than that of the first. The deduction is correct; but it must be allowed that it does not necessarily appear so to everybody. Indeed, Prevost, and Saussure before him, attributed the absence of dew on metals to an electric force; Leslie explained the same phenomenon by a particular repulsion, which, he said, existed between metallic surfaces and watery vapor; and those who maintained that dew arose from the earth, explained the same thing by the heat and electricity disengaged by the chemical action of metals upon the particles of this same vapor, at the moment of their passage to the liquid state. To show that these hypothesis are untenable, I first take three thermometers with graduated stems, and on each tube I fix a small cork about five or six millimetres above the bulb. This cork helps to support the metallic cases in which the thermometers for experiments on nocturnal cooling, are inclosed. The first case consists of a small, thin, polished silver or copper cup, like a common thimble, and large enough to contain the bulb of the thermometer; the second is a tin cylinder, open at one end and closed at the other; this serves as an envelope for the graduated tube. The two metallic pieces (which can easily be put off or on,) are kept in their places by the elasticity of the cork.

In the next place I procured three tin cups, each having a lateral opening near its bottom, through which the bulbs of the prepared thermometers can be passed, while the stems with their envelopes remain horizontally on the outside. These cups are supported by fine metallic tubes, provided with covers of the same nature, and the whole were exposed to the air on a calm fine night. One of the thermometer cases was blackened, and the other two were in their natural state, and the cups were sometimes open and sometimes shut. Such was the apparatus with which I compared the nocturnal radiation of silver with that of lampblack. Suppose the cups to be first shut, the three thermometers then mark the same temperature. Then by opening two of the cups, and leaving the third, containing one of the bright thermometers, shut, it will be seen that the metallic thermometer which is now exposed to the air, falls so little that hardly any change can be observed, except with the finest instruments; while the thermometer coated with lampblack, falls very visibly, and after a few minutes it will mark three or four degrees less than the thermometer in the closed cup—an evident proof that this difference is owing to the heat radiated by the lampblack, and not at all to the contact of the exterior air, which equally surrounded the polished metallic casing of the other exposed thermometer. My results confirm, in a striking manner, the assertion of MM. La Provostaye and Desains, viz: that the emissive power of metals is much less than the experiments of Leslie, Dulong and Petit, led people to suppose.

The radiating power of lampblack being 100, that of laminated silver I found to be 3.026. MM. LaProvostaye and Desains find 5.37 for silver chemically precipitated on copper, and 2.1 when the silver is polished. According to the last mentioned gentleman, the emissive power of recently laminated silver is 2.94; while 2.38 is that of laminated silver burnished.

From observations made in 1838, I am led to believe that the differences in the radiating power of the polished and the scratched side of the cube in Leslie's famous experiment, is not owing, as was generally thought, to the differences in the mechanical state of the two surfaces, but to a change of density resulting from the scratching. This appears, moreover, to be confirmed by the three following facts: 1st. The variation in the emissive power is only observable in metals; marble, jet, or ivory have the same radiating power whether they are smooth or not. 2d. If silver be melted and slowly cooled in sand molds, then burnished and afterwards scratched with a diamond, so that the bottom of the scratches be compressed and condensed, its radiating power will be less after the scratching than it was before. 3d. This same piece of silver, melted and polished, has its radiating power diminished by being hammered or laminated.

Thermoscopic instruments similar to those described above, and having the cases covered with varnish, black lead, isinglass, sawdust, sand, dust and leaves, constantly indicated a very sensible fall of temperature before becoming moist with dew; the lapse of time between the fall of temperature and the deposit of dew, sometimes amounted to several hours; a fall of temperature, moreover, often occurred without any deposit of dew at all during the night. This last phenomenon occurred the more frequently the higher the thermometers were placed above the ground. By making your observations at a certain height above the soil, you can delay or entirely prevent the deposition of dew on your instruments, and prove conclusively that it always follows and never precedes the production of cold. I have never seen the polished metallic cases of my thermometers covered with condensed vapor during damp nights, provided there was no trace of fog in the atmosphere.

Hence we see, that in order that a body may be covered by dew it must first cool to a certain degree, and the reasons why metals do not become covered with dew, is that they do not become sufficiently cold by radiation. But is there nothing else to hinder the precipitation of dew on metals? In other words, is the feeble radiating power of metals the true and only reason why they are never wetted by dew?

The following experiment seems to me to answer this question, at the same time that it refutes the theories that dew rises from the earth or falls from the clouds, and clearly proves Well's principle: On a tin disc, as large and thin as possible, draw a concentric circle with a radius equal to one-third of that of the disc, and cover it with a thick layer of varnish. Then take another tin disc less by ten millimetres than the varnished circle; and having soldered a pointed iron wire (2 millimetres large and 2 or 3 decimetres long,) at its centre, and perpendicular to it, place the wire through a hole in the center of the great disc on the varnished side. The great disc is to be pushed along the wire until the two discs are about five millimetres from each other, at which distance they must be kept.

The discs so joined are to be taken in the evening out in the fields, and left for a few minutes in a horizontal position, quite out of contact with any other bodies. If the night is calm and fine, phenomena which one might easily foretell will soon be observed on the surface of the larger disc.

It suffices, indeed, to remember that in the position in which the instrument was left, the small disc was uppermost, and hence an annular band of the varnished part of the lower disc will be exposed to the air. Now it is clear that this band will radiate heat, cool, become covered with dew, and will propel cold and dew in consequence, from the side next the center, and from that next the circumference. This propagation will, however, proceed much further in the latter than in the former direction, and for this reason—the points cooled by contact will cool further by radiation, and will become covered with dew,

whilst the varnish beneath the small disc can only cool by contact. And we find that the central part of the varnished circle remains perfectly dry, whereas the outer metallic band is wetted to its very edge, if the atmosphere is exceedingly damp.

But there is another circumstance which we could not so easily have foreseen. I mean the exact repetition of the same appearances on the surface of the disc turned next the ground. Dew begins to appear on this surface exactly opposite the little exterior varnished band; a light whitish circle suddenly appears on the polished metal, and after becoming better defined, spreads little by little, sometimes as far as the edges of the plate in one direction, but never reaches the center, which remains quite dry and brilliant like the corresponding portion on the other side of the disc, and the small circular roof which covers it without touching it.

From this very simple experiment we draw the following conclusions. Dew does not fall from the sky, because the upper disc is always dry, and the greater part of the lower one is wetted. It does not arise from the ground, because if the exterior part of the lower surface of the great disc is covered, the middle part of it remains perfectly dry and brilliant. Metals do not repel aqueous vapor which forms dew, nor do they cause its evaporation, as it is deposited upon them, since we see some parts of the metal quite wet, and others quite dry.

The appearance of the dew first on the uncovered band of varnish, and its gradual extension to the other adjacent and opposite parts of the great disc, together with the fall of temperature observed on the varnished cases of the thermometers exposed freely to the air, prove that dew is a pure consequence of nocturnal radiation, which gives to good radiators the degree of cold necessary for the condensation of the elastic invisible aqueous vapor which pervades our atmosphere.

Thus far all the facts agree perfectly with the generally received theory of dew. In a second letter I shall bring forward others which are not capable of explanation in the usual way, but which, nevertheless, are connected in a fortunate manner to the principle of Wells.

SECOND LETTER.

In this letter I shall show, as I before promised, that although Wells' principle of the origin of dew is correct, it is impossible to explain all the thermometrical and hygrometrical phenomena which are produced during a calm fine night, without taking into account a new circumstance, as yet entirely neglected, which is of the greatest consequence in the nocturnal cooling of bodies. But before proceeding to this point, I shall offer a few remarks on two series of experiments, advanced by those who maintain that dew arises from the soil, and which they say completely refute all theories of dew based upon radiation.

A certain number of thermometers, as nearly as possible equal, both in size or sensibility, are taken, of which some are coated with lampblack, varnish and Indian ink, while others are covered with gold, silver, tin, copper, and leaves of plants. These instruments, thus prepared and exposed to the free atmosphere on a calm fine night, indicated at first temperatures differing a little the one from the other; but after a certain space of time, they all indicated very nearly the same temperature. The experiment was varied—on the ends of glass tubes placed upright in the soil, plates of zinc, copper, glass, were laid; in the center of each of these plates was a depression in which the bulb of the thermometer was placed, while its stem, supported by an iron wire, remained in a vertical position; another thermometer suspended freely between the plates marked the temperature of the air. Here again the instruments, when exposed to the air in the evening, indicated differences,

of temperature which afterwards disappeared, so that at day-break all the thermometers were sensibly at the same height.

These facts appeared to the opponents of Wells' principle completely decisive; and from that time forward they maintained that "the pretended cold which is indispensable for the formation of dew is a pure invention!" But the experiments of these gentlemen were made near the soil, in an atmoshphere charged with moisture; all the tubes of the thermometers were uncovered; and in the last experiment their bulbs communicated by means of the plates, with the tubes supporting them. Now glass, of which these tubes were made, radiates considerably; its temperature falls and the cold acquired is communicated to the bodies touching it; the latter being in a moist atmosphere cause a deposit of aqueous vapor; and we know that water radiates heat and cools as much as glass, lampblack, or varnish. There is then nothing surprising in the fact that the thermometers on the plates marked, after a certain time, the same temperature as those surrounded with better radiating substances. From the fact that the metallic surfaces covered with dew were as cold as the glass or blackened surfaces, we can only conclude that the radiating powers of water, lampblack and glass, are sensibly equal; but we can by no means, from these experiments, say that metals cool on calm fine nights as much as glass or lampblack.

In order to be certain of the true state of things, glass must not be employed; the supports must be made of polished tin, which hardly radiates at all, and which sufficiently isolates the thermometers from the soil; moreover, all the parts of the thermometers must be covered with metal. Then, the metal being polished, the thermometers will give the true temperature of the air; and when the casing is varnished, blackened, covered with leaves or any other substance, we obtain by a simple comparison with the polished thermometer, the degree of cold produced by the radiation of this substance.

By means of such instruments as these, I have found that leaves of plants, glass, varnish and lampblack, always cool on calm fine nights, from one to two degrees below the surrounding air. On looking at the smallness of these differences, one might be led to suppose that the fall of temperature observed by Wilson and Wells, and which amounted to seven or eight degrees, was much exaggerated. But when we remember that in their experiments the thermometers for showing the temperature of the air were raised four or five feet above the earth, while those covered with the radiating substance were close to the soil, we can easily see why their results and my own differ so much. For Pictet has long ago shown that the temperature of the air decreases rapidly, on calm fine nights, as we approach the earth. This fact alone would render the temperature of the radiating substance, placed close to the surface of the earth, lower than that of the air in which the higher thermometers were placed; so that, in this arrangement of the instruments, the difference between the two thermometers by no means indicates the amount of cooling of the body below the surrounding air.

In another of Wells' experiments there was a thermometer covered with wool placed at the same level as a free thermometer, and the difference of temperature observed was 5°,3. Here the wool certainly cooled two or three times as much as the lampblack in my experiments; and I know that the radiating power of wool is not greater than that of lampblack.

To explain the cause of this extraordinary cold observed by Wells, we must first clear up any doubt that may be attached to it. It was for this purpose that I covered a thermometer with wool, and exposed it to the air with two others of the same size, one of which was coated with lampblack and the other with polished metal; in a few minutes the thermometer with the wool fell twice as low as that coated with lampblack. A fourth

thermometer covered with an equal quantity of wool, pressed close to the instrument by means of a metallic wire, gave a result intermediate between the other two. Lastly, I covered a fifth thermometer with two pieces of flannel, and it fell still less than the last. These experiments were repeated, cotton being used instead of wool, and the results were perfectly similar. I then began to suspect that the superiority of the cotton and wool over the lampblack, was owing to a certain modification in the radiating power of these bodies, caused by the presence of the air filling their interstices.

But how can air increase the cold resulting from radiation? The answer is simple. We have known for many years, that the nocturnal cooling of a body does not vary with the temperature of the atmosphere. Thus Capts. Parry and Scoresby state that on calm fine nights in the polar regions, the snow was cooled about 9° below the air four or five feet above it when the temperature of the latter was 0°—or 25°—or 30°. M. Pouillet has found that Swan's down is cooled 7° below the air at 0° or—25°. And I for my part, have found that the blackened or varnished thermometers cool a certain fixed number of degrees, whatever the temperature of the night may be. Now it is clear that the tufts of cotton or of wool spread out on the upper part of the bulb of a thermometer, after having cooled by radiation, will communicate the cold so acquired to the surrounding air, which becomes by this means heavier, will descend in the interior to fall on the ground; but a certain time is required for the passage of this air through the interstices of the wool or cotton. The threads then, of these last, will be in contact with air that is colder than it was at the beginning of the experiment; and as the fall in this temperature below the surrounding medium is invariable, they must necessarily become colder still. This increase of cold will cause a new fall of temperature in the medium; the latter gives rise to another cooling in the radiating body; and so on until the weight acquired by the condensed air is sufficent to overcome the obstacles opposing its exit.

The same phenomena take place naturally in many circumstances. Indeed, plants with hairy leaves are colder than those with smooth ones. The temperature of grass and that of other low plants which clothe the fields, falls, in consequence of this reaction of the air, much below that of elevated bodies, because of their vicinity to the soil which supports the surrounding medium, and compels it to remain in contact with the radiating surfaces. The truth is, that the layer of air by which the grass is surrounded, is not steady; it changes its position, on the contrary, in precisely the same way as water in a vessel over the fire; the particles of air condensed by the cold on the tops of the blades of grass, descend towards the earth, become heated by contact with the latter, and rise again towards the tops of the leaves, and so on; but it is clear that, in spite of this state of motion, the air on the whole cools, and in order that the grass may be of the same constant temperature below that of the surrounding medium, it must cool more still; and thus a gradual cooling and an increasing moisture in the layer of air are caused.

I cannot enter here into all the necessary details to show how the frigorific reaction of the air explains all the facts preceding and accompanying the appearance of dew, and many other phenomena connected with this interesting question, which have not as yet been satisfactorily accounted for. They will all be found, however, in my memoir, which I shall soon, I hope, have the honor to present to the academy.

THIRD LETTER.

My studies on dew seem to me to have proved conclusively, that if Wells' principle is true, the theory known by the same name is erroneous, or at least exceedingly incomplete. I thought that I had stated this proposition so clearly as to leave no room for any misun-

derstanding; but on looking over several periodicals I think that it has been entirely misrepresented. In short, the editors of these papers, having perhaps the same opinion as he who first among them noticed my theory, cite the first part of it, and pass over the second in silence; the reader is hence led to believe that my work tends only to confirm Wells' theory as explained in all treatises on physics and meteorology; while it is precisely to an opposite conclusion that my experiments lead. I shall try to render myself more intelligible by setting out from those data on which the theory is based.

Take two pairs of thermometers enveloped in their metallic case, and hung, by means of metallic threads, in the manner described in my first letter. Suppose that each of these pairs is composed of one thermometer with a polished, and another with a blackened case. Let us suppose lastly, that, on a calm and clear night, one of these pairs be fixed close to the surface of an exposed meadow, while the other be placed four or five feet above the surface, so that the two thermometers of each pair are at the same level.

After a short exposure, the black thermometers will be seen to descend about 1°,5 below the metallic thermometers beside them. However, the temperatures indicated by the lower will be very different from those marked by the upper pair; the difference will amount to five or six degrees, if the night is calm and fine; and as the lower pair of thermometers always indicates the coolest temperatures, we conclude that the differences observed between the indications of the two pairs of instruments, arise solely from the different temperatures of the atmospheric layers in which they are placed; and that consequently, on calm and clear nights, the temperature of the air decreases rapidly as we approach the earth.

Now the experiment on which Wells' theory rests, consists in the often-repeated observation that a common thermometer, placed in contact with the grass, indicates a much lower temperature than a thermometer raised four or five feet above the soil; whence it has been concluded that the grass is cooled many degrees by radiation towards the sky. * * * But it is easy to convince yourself that this conclusion is quite unauthorised. In short, place one of your uncovered thermometers in contact with the grass, and let the other hang freely in the air, at the same distance from the ground, you will find that the two instruments mark the same degree. Now nobody would deny that this is the way to proceed to show, according to the old method, the cooling of the grass below the medium surrounding it. We are forced, then, to conclude that the fundamental data of Wells' theory are inconclusive—1st, because the surfaces of the thermometers employed radiated quite as much as the blades of grass; 2d, because the thermometer destined to measure the temperature of the air was placed in an atmospheric layer much warmer than that which surrounds the grass in contact with the other thermometer.

The principle that the deposition of dew is owing to the cold caused by radiation, is, I repeat, perfectly just, but Wells' theory is incorrect. The reason of this is evidently because the influence of the air in the production of the cold which is continually developed near the surface of the earth, has been entirely neglected. It has been vaguely said, it is true, that radiating bodies, placed at a certain height, do not lower in temperature so much as those placed close to the ground, in consequence of descending currents which are formed around the first, and are absent from the second. But that was insufficient to show the true part played by the air in the formation of dew.

It was necessary to prove, as I think I was the first to do, that notwithstanding its inability to cool by radiation, the air close to the earth contributes powerfully to lower the temperature of the plants in it, by means of a series of actions and reactions, the causes and effects of which have, if I am not mistaken, been clearly defined in the second of the

two letters which form the object of this discussion. Those who have clearly seen their true meaning will permit me, without doubt, to save them the annoyance of a useless repetition, and to refer the editors of the papers of which I spoke above, to a rather more attentive perusal of the numbers of the *Comptes rendus*, where they are inserted. After which they will be quite at liberty to show that I am wrong; but they will first admit, I hope, that they have misinformed their readers with respect to the consequences resulting from my work on the phenomena of dew.

ROUGH NOTES ON THE HISTORY OF BOTANY.

BY A. A. F., SYRACUSE, N. Y.

Though the science of botany is one of the oldest in the world, we cannot but admit that by mankind in general it has been deplorably neglected. For centuries, a knowledge of this delightful science was confined within the walls of monasteries, so that little botanical information reached the minds of the populace. In the earlier ages there were botanical devotees—"herbalites," as they called themselves, who devoted themselves to the study of plants; but the advancement which they made was liable to be lost and forgotten in the dim light of the dark ages. All concentrated their efforts to one point, namely, the *classification* of plants, which seemed to baffle all their investigations, and set at naught their united researches.

The oldest mention of the subject of plants which we have, may be found in the History of the Creation of the World, by Moses. It was on the third day of this great work that God said, "Let the earth bring forth grass, the herb yielding seed, and the fruit tree yielding fruit after his kind, whose seed is in itself upon the earth, and it was so, and the earth brought forth grass, and the herb yielding seed after his kind, and the tree yielding fruit, whose seed was in itself after his kind, and God saw that it was good." It is recorded that Adam gave names to all the beasts of the field and to all the fowls of the air, and to everything wherein was life. But Milton imagines that to Eve was assigned the pleasant task of naming all the flowers, and numbering their tribes. When our parents were cast out of Paradise for their disobedience, and were about to depart from their delightful home, Eve, in the bitter anguish of her soul exclaims—

> O, unexpected stroke, worse than death!
> Must I leave thee, Paradise? Thus leave
> Thee, native soil, these happy walks and shades,
> Fit haunts for Gods, where I had hoped to spend,
> Quiet though sad, the respite of that day,
> That must be mortal to us both. O flowers,
> That never will in other climate grow,
> My early visitation, and my last
> At even, which I bred up with tender hand
> From the first opening bud, and gave ye names,
> Who now shall rear ye to the sun, and rank
> Your tribes?

The Bible and the poems of Homer, afford us the only vestiges of the botanical knowledge in the earlier stages of the world. Among the most renowned of early botanists were Aristotle, who published various works upon Natural History about 386 years before Christ. Theophrastus published a work entitled "The Causes of Vegetation," also "A History of Plants." He treated upon the different kinds of plants separately,

such as aquatics, parasites, culinary herbs, &c.; he also treated upon their anatomy without the aid of a microscope, and advanced correct ideas respecting the various functions of their structure. DIOSCORIDES was a physician of *Greek* extraction who traveled over *Greece*, Asia Minor and *Italy*, in order to obtain the plants of those countries. He divided them into *four* classes, and gave descriptions of over 600; his labors were of comparatively little value, on account of want of method and arrangement. PLINY, who lived in the time of NERO, protested against the erroneousness of the times, and also published some valuable works; his "History of the World," was evidently intended to embrace the whole of nature. Many learned men devoted their untiring attention to botanical study; a detail of all would carry us beyond our limits. Among the most popular of later times were LEONARD FUCHS, of Germany, and TOBBIN, physician to James 1st. GESNER was also a native of Germany, of humble and obscure origin; he possessed a powerful and penetrating mind, and exploring the *Alps* he discovered many valuable plants which were then unknown. He conceived the idea of groups, or natural affinities in plants. His descriptions were reliable and accurate; before his time the art of describing plants with accuracy, was unknown. CLUSIUS was born about the year 1526; his parents had destined him for the profession of the law—but his decided love for the study of nature finally induced him to abandon his profession. He traveled over most of Europe, and made more discoveries in the vegetable kingdom than any other botanist of his day. CESALPINUS, who lived cotemporary with CLUSIUS, proposed to arrange all known species into classes, but his method was too imperfect to make it in any way valuable. JOHN BANHIN, the friend of GESNER, composed a "General History of Plants," which was a work evincing great learning. GASPARD, his brother, conceived the plan of a work which should embrace accurate descriptions of all the plants which former botanists had discovered. About this time the plants of our own country began to attract attention. LOUIS XIV sent to America a botanist by the name of PLUMIER, who made many valuable discoveries. He described more American plants than any other traveler had done. Botanists now began to study the stamens and pistils of plants, as it was predicted that the science would remain obscure as long as *species* and *genera* remained undefined; the result of which was the production of a work by *Ray*, a celebrated botanist, entitled a "General History of Plants," in which he separated them into thirty-three classes, twenty-seven of which were composed of *herbs*, and the rest of *trees*. JOSEPH PITTON DE TOUNEFORT, was born about the year 1656. He had also been destined for a profession, but he, while young, also evinced a great fondness for the study of nature, and finally devoted himself exclusively to it. He traveled over the Alps and Pyrenees collecting many new flowering treasures. It will be observed, that up to this time the endeavors of botanists were mainly directed to the discovery of some mode of classification. Investigating minds now began to study their anatomy and physiology, which had been totally neglected since the days of the *Greek naturalists*. It was at this period that the microscope was invented, which threw much additional light upon the subject. As yet, however, the science of botany lay in scattered fragments of various contending systems. Much labor had been bestowed, and many facts collected, but there was no central point around which their information could be gathered. CHARLES VON LINNÆUS was undoubtedly the greatest botanist in the world, for it was through his system that all others have originated. He was born in the year 1707. His father was a clergyman, and had designed his son for the same sacred office, but seeing him leave his books and ramble in the fields in search of flowers, he inferred that he was a weak mind, unfit for close investigation, and was about to put him to some mechanical employment, when some discerning persons, perceiving his

devotion to the study of nature, placed him in a situation favorable to the development of his peculiar talent. LINNÆUS formed anew the science of botany—he defined every plant with precision, and gave it an appropriate name. He studied the stamens and pistils, believing, as he did, that no plant could be destitute of them; the result of his investigations was the production of his beautiful arrangement called the "Artifical Method."

Among the first of moderners who investigated the internal structure of plants, were GREER, LEUENHOEK, and CAMERARIUS.

Messrs. LINDLEY and LOUDON, of England, have published many valuable works, and given an increased impulse to the advancement of our educed science. Drs. TORREY and GRAY, of our own country, have done much in perfecting our present system of botany. Dr. GRAY'S Manual of Botany is the best in use in America; his Botanical Text Book is the clearest exposition of vegetable physiology that I have ever seen, and is, I believe, the American standard. There are many other celebrated botanists of our age, who have done much to increase taste for our science, and to remove the obstacles which have so long debarred us from obtaining a knowledge of the noblest of nature's works. Botany rests now on a solid foundation, and no other science can boast of more firm and true advocates than it; and it is hoped that as discoveries are made, they will cluster around the principiples already established, each taking its proper place in the various departments now arranged for the reception of scientific truths. AUGUSTUS A. FAHNESTOCK.

A COTTAGE FOR A COUNTRY CLERGYMAN.

[SEE FRONTISPIECE.]

WE noticed with delight in Great Britain, that among the warmest devotees of horticulture and rural taste generally, are the country clergymen. Their homes are always pictures of comfort, snugness, and beauty, and thus exercise a more powerful influence in disseminating a love of rural life and domestic enjoyment among the agricultural population than the castles and mansions of the great proprietors.

Little by little, something of the same tastes are growing up in this country. We received a letter lately from a clergyman in Worcester county, Mass., (whose name he would prefer withheld,) soliciting some assistance in the plan of his house. His letter contained a sketch of what he considered the essential features of the plan, and as we have always found that a home is most conveniently arranged when the architect proceeds upon the ascertained and acknowledged wants of the family, or the class of families for whose use it is intended, we have in modifying and re-arranging the cottage for our friend, the country clergyman in Massachusetts, adhered pretty closely to his own sketch of the principal floor—only varying it where it could be improved.

As his letter will explain his wants and those of many who are situated like him, we print the following extract from it, for the benefit of our readers, in order that they may see the real requirements of such a family.

A. J. DOWNING, Esq.—In the "*Horticulturist*," to which I have become a subscriber, I find a few pages devoted to answering the questions and relieving the difficulties of your correspondents. Following their example, will you allow me to detain you a moment with a statement of my troubles, with the hope that you may give me a little assistance—not, at present, in respect to *plants*—but *houses*.

I recently purchased, and have read with much interest, your volume upon "*Cottage*

Residences." I have been wishing to procure a *home*—one however, plain and simple in its character, that might yet have something attractive about it, above the appearance of the unsightly fabrics that are too often classed under the head of houses. And I turned over the pages of your volume in eager hope of finding something that would be adapted to my wants, and that would be so economical in its construction, that it might be made available for the comfort and convenience of a *poor country clergyman*, in the condition of him who addresses you. There were many of those *snug cottages* that charmed me, but I could not find in them what I cannot do without—*a study*. It was only in the more expensive structures, the cost of which places them wholly beyond my hope of possession, that the "*library*" found a place. With the expectation that others will aid me in the erection of a house, from absolute necessity, I wish to restrict myself to the least possible outlay. Yet I have felt that the most modest residence might have something of true beauty in its character, and that there was no need in any structure, of sinning against architectural propriety and law. I dare not think of having a house that shall cost much above $1,100 or $1,200, for I can ill afford to pay the rent of one that shall much exceed that cost? But is it impossible that for about that sum we may be furnished with the conveniences we need? We have in prospect of possession, a little bit of land, but half an acre, fronting to the *south* upon the road, which runs east and west. To the west and south-west we shall have a fine prospect, which we wish to enjoy by bringing the rooms mostly occupied upon that side of the house. The rooms we desire upon the first floor are a kitchen, sitting-room, bed-room, study, parlor, and pantries, etc. We wish to place the house upon the east side of the lot, or very near the east side, that the garden may occupy the other portion. From your "Cottage Residences," with my own cogitations, I have endeavored to approximate such a plan as we need,—yet find it still defective; and I much desire to know whether it will meet your sincere approval, or if you can aid me in regard to the defective points. Will you have patience with me, while I lay before you a rough sketch of my plan—and tell you what there is to *me*, unsatisfactory about it.

[We omit the country clergyman's sketch of plan, which we have varied and improved, though the main features of his sketch are all retained, and his remarks upon it.]

And now what should be the external finish of such a house, that it may be neat and proper, yet without any *showing pretension*? I have attempted to give you a *front elevation* with my *pen*, but it has run wild with me. I will try my pencil, and may succeed better.

My difficulties are to bring the kitchen nearer the sitting-room, without giving up the bed-room; to get a back stair-way, underneath which may be a way to the cellar; and to obtain a room over the kitchen; and to know whether the plan of such a house would meet the approval of an architect's eye, externally—or how, most economically, it may be made acceptable to correct taste in its outward appearance. Which of the styles among your "Cottage Residences," would be a proper and economical finish for this? Poor as I am, for I possess not a farthing aside from my salary of $700 per annum, I dislike to be accessory to the erection of a house that shall be an eye-sore to those who may rightly judge it. We have few houses here built with any regard to good taste. I appreciate most fully all that you say about the proper construction of houses, and now, when I am struggling to obtain one for my own home, I desire that it may be, however humble, an approximation to what a neat little "parsonage" should be—and that it may be a *standing lesson* to those who belong to my parish, of the manner in which a pleasant, unpretending home may be constructed—with the hope that it may not be without a certain tendency in its influence upon their minds, to an increased refinement and moral elevation.

I beg pardon for so long taxing your patience. I should not have been emboldened to address you thus familiarly, were it not for the *con amore* spirit with which you have written upon the subject of architecture, and of *homes*. If you will be kind enough to give me a little help in respect to the points that perplex me—or if you will furnish for the "Horticulturist" the design for a *cottage* for a *country clergyman*, that shall include the accommodations which I have suggested on the first floor, with three or four lodging rooms in the chambers—and at a cost that shall be within the means of *us poor ministers*—you will greatly oblige me and others, and help those who *would* do something to carry out the principles which you have so ably advocated. Yours very respectfully.

For the plan and perspective view of the cottage which we have designed for the "parsonage" of the author of the foregoing letter, we refer our readers to the Frontispiece of this number. In the elevation we have chosen a simple cottage style—one that always befits rural scenery, and gives the most room for the cost of any style that can be adopted. The rustic veranda, and rustic trellises over the windows, are intended for vines—but not merely as a support for vines—but rather as thereby giving an air of rural refinement and poetry to the house without expense. We say without expense; and by this we mean comparatively; for we do not mean these rustic trellises to be built by carpenters, and included in the original cost of the cottage, but to be added afterwards from time to time by the clergyman himself, aided by some farm-hand, expert with the saw and hammer. They should be constructed of cedar poles—with the bark on—which may be had almost anywhere in Massachusetts for a trifle, and which if neatly put together will be more becoming to such a cottage as this than elaborate carpentry work. By the addition of such trellis work and a few vines, a simple rural cottage like this may be made a most attractive object in a rural landscape.

The plan (see frontispiece,) is, as we have said, mainly that of our correspondent—the country clergyman. We have only retouched it here and there, so as to bring the rooms into good fellowship. We could not afford a separate "back-stairs," but we have given something of the utility of one, so far as the cellar way is concerned, by shutting off the back entry from the front hall, by a door at C. A door at D, opens on the veranda. There is a study with places for books, at B, (where otherwise may be a door to connect the study with the living room, if thought desirable:) a nice parlor on one side of the entry, and a living-room on the other side—which living-room has two convenient closets so placed at the side of the room as to form a kind of bay-window effect, that would be pleasing and convenient. There are also, a kitchen, a bed-room for the family, and a childs' bed room, all in connection. The door between the latter and the back entry should be glazed, to admit light to that part of the entry behind C. If a communication between the entry and the large bed-room is thought more desirable than the closets, a door placed there instead of the closets, would answer that purpose.

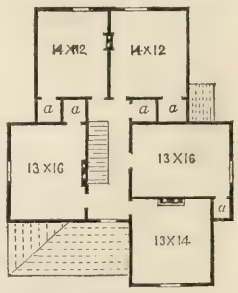


Fig. 1—Second Floor.

The second floor plan, (fig. 1,) shows five good bed-rooms with a closet to each, (drawn to a smaller scale.) Fig 2 is a slight sketch of the rear of the house—


Fig. 2—Sketch of the Rear.

showing the back porch and the arrangement of the kitchen wing. To build this house for the sum named by our correspondent, it must, of course be constructed of wood, and in portions of of the country where both labor and materials are not at the present high prices about New-York. The whole must be constructed in a simple manner—the inside walls to be white-washed or neatly papered—the first story to be 9½ or 10 feet high only.

The principal merit of this design is in its comprising a convenient arrangement for the purpose, brought into a form that is rural and picturesque.

CONDITIONS REQUIRED FOR THE GROWTH OF PARASITIC FUNGI.

BY J. TOWNLEY, MOUNDVILLE, MARQUETTE CO., WISCONSIN.

In this age of inquiry and progress, it is surprising that so little attention has been paid to the habits of parasitic fungi, and that so little is really known respecting the conditions which favor their growth and increase. To the farmer and gardener the subject is one of much importance; not a season passes without much of their labor being rendered of no avail by the influence of these almost invisible destroyers. How great, for instance, is the loss annually sustained by the attack of rust, smut, and mildew, on the wheat crop alone? and who can estimate the value of the food destroyed within the last five years, by the attack of the parasitic fungus Botrytis infestans on the potato? Almost every plant we cultivate is liable to be atacked by fungi, and he would certainly be entitled to no mean place among the benefactors of mankind, who should discover a means by which their development might with certainty, and at will, be prevented. The powers of man may not be permitted to extend thus far, nevertheless, there are grounds for concluding that by patient inquiry, and well-considered experiments carefully conducted, we may ultimately attain greater control over them than we now possess.

Different plants, as well as different animals, have their peculiar parasites, some parasitical fungi will indeed prey upon many different plants, but the attack of a species is generally confined to a certain natural order of plants, or to a genus, or to two or three species of a genus; whilst some, as in animals, seem to exist on a particular part only of one species. The parasitical fungus which is the cause of the mildew of wheat, will not live upon turneps; that which infests the turnep will seize upon the cabbage, they being nearly allied plants, but it has no power over the potato; yet the parasites of the turnep and the potato are nearly allied. For a plant to be attacked by fungi, two things, then, are required; the presence of the reproductive germs of its peculiar parasite, and the conditions required for their growth. Hence, one apparent means of securing a crop against an attack of fungi, is to obtain seeds of plants free from their parasite, and to grow them on land where no similar crop has been previously, or at least recently grown; a second mode is to destroy the germs, if seeds or plants are known to be infected, as is commonly done in the case of wheat. It has been proved experimentally, that wheat may be inoculated with smut, by simply mixing smutty ears with clear grain previous to sowing. And "Quekett found that he could propagate the ergot of rye by mixing the sporules with water, and applying this to the roots." (Balfour.) These facts, coupled with the beneficial effects of steeping grain in various solutions, indicate that the germs of fungi find their way into plants by means of the root, or through the seed itself. May it not be worth while trying whether any benefit would be derived by steeping seeds of the pear in weak alkaline solutions, as of lime, potash, or ammonia, which are said to form a soapy matter

with oil in germs of fungi, and thus destroy them. In old nurseries, having a tenacious soil, and where healthy pear seedlings cannot now be raised, it may be well to try the effect of paring and burning the surface soil where the pear seeds are intended to be sown. If the burning is so managed as only to char the organic matter, the soil might be freed from the germs of fungi, and its productive powers at the same time increased.

It is doubtful, however, whether these precautions will in all cases insure the safety of a crop. The spores of fungi are probably admitted into the interior of plants, by the stomata or breathing pores of the leaves, as well as by the roots. Leaves inhale gases and absorb moisture; and how very minute must be the reproductive germs of a plant, when the plant itself, in many Instances, is so small as only to be seen distinctly by the aid of the highest powers of the microscope. If they are admitted into plants by this means, then it is an important question to determine what are the conditions required for their development, and whether any of them are under our control, and by what means they can be avoided. We shall have the surest ground for hoping successfully to subdue this evil, if we can only discover the secret of its power. I think it may be assumed that fungi have not the power to destroy healthy vegetation—if they had, where would be the limit of their ravages? The Rev'd. M. J. Berkeley, who is highly distinguished for his knowledge of fungi, has observed young plants of Botrytis infestans springing from within the cells of a potato. As the potato tuber is considered to be formed exclusively of matter which has been prepared by mature leaves, these germs could not have immediately vegetated on entering the potato plant, but were probably carried with the elaborated sap of the leaves, and deposited with it in the tissue of the tuber. Mr. Berkely has further stated that "it seemed to him most certain, from observation of those fungi which grow from the tissues of plants, that minute particles, too small to be distinguished by the highest powers of the microscope, must be carried about with the juices, and when fitting circumstances concur, proceed to act on the tissue with which they are in contact." What then are these fitting circumstances? The two tribes into which fungi may be artificially divided, have separate tasks assigned to them. The office of one is obviously to hasten the decay of matter which is already decaying; the office of the other, I believe, is to prey upon or hasten the death of that which is unhealthy. Those which flourish on dead organic matter, appear only when decay has commenced, not while it is yet fresh—a fact well known to many. "Fungi," says Mr. Solly, "are only developed in those solutions which are in that state of putrefaction favorable to their growth; moreover, they do not appear till the solution has acquired that state." There must, I believe, be unhealthy action, possibly some slight chemical change in the fluids of superior plants, before parasitic fungi can successfully attack and destroy them. Mr. Berkeley, however, whose opinion is entitled to much deference, considers that the growth, and especially the numbers of fungi, depend upon certain atmospheric influences. There can be no doubt, whatever, that the state of the weather has considerable influence on the development and increase of fungi in ordinary cases. For instance, in moist, dull seasons, crops are observed to be always more or less affected by mildew. Any sudden check in the progress of vegetation, such as is caused when hot sunny weather is succeeded by calm dull days, or by a sudden transition from weather favorable to rapid growth, to weather cold and wet, is generally considered the precursor of blight, and favorable to the growth of fungi. Now, circumstances like these would exercise an injurious influence on the health of the larger plants; it is therefore doubtful, whether it is not the state of the plant attacked, rather than any peculiar atmospheric condition which favors the growth of the parasite.

Other facts seem to indicate very clearly that circumstances of soil, situation, manure,

&c., predispose plants to an attack of fungi, independent of atmospheric influence; thus we read respecting the diseases of wheat—"it rarely happens that blight, rust, and mildew are felt in sunny seasons, except in confined enclosures, or marshy ground, where the evening dews stagnate, and fogs are generated." Again, "in looking over a blighted field of wheat, we may observe that the lowest and richest parts, or where it stands thick upon the ground, are more affected than those which stand higher." Wheat to which manure is directly applied, is found more subject to rust and mildew, than that which is grown upon a clean fallow. An interesting instance of the predisposing influence of an excess of manure, is mentioned in the Agricultural Gazette. Wheat which had been top-dressed with guano, "was a good crop, and free from symptoms of blight, excepting in the spots where the sacks were put down; here the straw was blighted, evidently from receiving an overdose." Now, all these different circumstances would tend to make wheat plants unhealthy, hence the attack of fungi—it cannot be attributed to atmospheric influences in these cases; since wheat growing in large open fields, or on the higher parts of fields, or on clean fallows, instead of on land recently manured, or if plants growing at proper distances apart, escaped. The atmospheric conditions under which the healthy and blighted plants were growing, must have been the same in most of these instances, but other conditions which affected the health of the plants, were not the same; the inference therefore, is, that the latter are most likely to be the conditions which led to the attack of fungi.

Andrew Knight considered that one of the principal causes of mildew was the want of sufficient moisture in the soil, more especially if excessive humidity in the air, and low temperature succeeded warm bright weather. The pea when cultivated late in the fall is very liable to be attacked by mildew, and Mr. Knight found that by deepening the soil and by copious watering he could prevent its appearance. In a forcing house he found it equally easy of appropiate management to introduce or prevent the appearance of mildew. "When he had kept the mould very dry, and the air in the house damp and unchanged, the plants soon became mildewed, but when the mould had been regularly and rather abundantly watered, not a vestige of the disease has appeared." The development of fungi in these cases also was obviously not dependent solely on certain atmospheric conditions, but partly on the state of plants consequent on the moisture or dryness of the soil in which they were growing.

We have further evidence that the growth of parasitic fungi does not depend exclusively on atmospheric influences. Varieties of the same species of plant growing under the same circumstances may offer greater resistance to fungi than others, owing apparently to some peculiarity of constitution, or to greater constitutional vigor, or to the stage of growth they have reached when exposed to the external influences which favored the devolopment of the parasite. When examining crops of potatoes on the first outbreak of the latest form of disease of that plant, known as the blight, or murrain, I have observed early varieties with the foliage destroyed, many of the tubers having the peculiar rotten-apple-like appearance while the parasite had only just commenced its ravages on some adjoining patches of a later variety. Instances have occurred in which tubers of a late variety had been introduced with the manure into a plot of any early variety, and the late plants continued to grow vigorously, while the foliage of the early ones was nearly destroyed and the tubers decaying. If the growth and increase of fungi depended solely upon certain atmospheric conditions, should not the attack have been simultaneous in these cases? The plants were growing under the same circumstances, living in the same soil, breathing the same atmosphere, and whether the germs of the parasite are admitted into plants by the

roots or by the leaves, it is probable that both the early and late varieties were inoculated with the germs at the same time, but in one the conditions were favorable for their development while in the other they were not favorable, and the difference must obviously have been owing to some internal cause as both were subject to the same external influences.

It has been commonly observed that varieties of the potato are usually attacked as they approach maturity, as if a certain cessation or decline of the growth of the plant favored the growth of the parasite; varieties of the potato are not however invariably mildewed at a certain stage, or when the plants have nearly perfected their tubers, neither is wheat and other grain crops always, though generally, blighted by rust or mildew when the plants are in ear. The vitality of an annual plant like wheat, or of the potato, whose stems endure but for a season, is probably more energetic at the commencement of their growth than when they have nearly performed their functions, and they may in consequence be better able to resist the action of ordinary external influences at that time than afterwards. If this be so, then it is not unlikely that different varieties of our cultivated plants growing under the same circumstances may offer greater resistance to attacks of fungi than others seeing that they possess different degrees of constitutional vigor. This is a point in the inquiry of considerable interest, whether according to the vigor or controlling power of the vital principle of a plant, so will be its power of contracting the action of ordinary external influences and its comparative freedom from disease arising from attacks of fungi.

Many of our garden plants are propagated by extension, that is by buds, cuttings, layers or roots instead of by seeds,—and notwithstanding the "tale of woe" revealed to your correspondent, Mr. Marshall, by the gallant old apple tree, which in spite of its age and infirmities persisted in believing that it retained the vigor of youth, I may be permitted to say that the evidence of apple trees and other plants seems to me to afford substantial grounds for coinciding with the views advanced by Andrew Knight, that each plant propagated by extension has a limited duration, that it cannot by any known means be continued equally healthy and vigorous forever; but that sooner or later the progeny will gradually decline in vigor become unhealthy and unproductive, not suited to the purposes of the cultivator and consequently extinct. This also suggests an interesting branch of the inquiry, whether as a variety declines in vigor it becomes more subject generally to attacks of fungi, or if an attack is more virulent and damaging than on younger and more vigorous varieties, growing under the same circumstances.

The hop is generally propagated by cuttings, and a writer who has raised plants from seed, in consequence of his old plants dying off, and the hops becoming small, and of a bad color, said, "We write from experience; having raised very many hop plants from seed, we have found them to be much more energetic and vigorous than those which have been raised from cuttings, their luxuriant growth enabling them to withstand the effect of blight." It is well known that some varieties of the potato have suffered much less from the blight than others, while some varieties recently raised from seeds, in the United States and Prussia, are said to have continued free from the disease, though growing near to others which were infected. I believe the potato plant, considered in the mass or as a species, to be in an unhealthy and degenerate condition; that it is, in fact, heredeterarily diseased, the accumulated result of maltreatment and neglect in the culture of the plant, operating through successive generations. This, I believe, is the foundation or predisposing cause of the disease; that the parasitic fungus, Botrytis infestans, is the immediate or exciting cause, the observations of men so well qualified to observe with accuracy in matters where fungi are concerned, as Berkeley and Morren, have already placed beyond the

reach of controversy, though possibly not of cavil. The unprecedented attack on the potato, so much more extensive and virulent than the usual attacks of fungi on other cultivated plants, I consider to be the result of its previously unhealthy condition. If these views are well founded, then the question, What are the conditions required for the growth and increase of parasitic fungi? has a great practical bearing, if considered with reference to this plant only, because if their growth and increase does not depend solely on atmospheric influences, but is favored by the unhealthy state of the larger plant, then we may reasonably hope, that by restoring the plant to its pristine vigor, with judicious selection, through several successive generations of seedlings, with improved culture, we shall obtain varieties which, when propagated by divisions of the tuber, will, for a time at least, resist the attacks of their parasite, just as wheat, turneps and other crops annually raised from seeds, now do; further than this we are not justified in anticipating. What we know of the attacks of fungi on other crops, forbids the hope now that the parasite of the potato is established in this country, (for several facts seem to indicate that it is a recent introduction to North America and Europe,) that our crops will ever be entirely free from mildew when the potato is restored to the highest rate of health which it is capable of attaining. And it is equally vain to expect, as many have done, that the vigor of the plant can be restored by one generation of seedlings. The progeny of unhealthy and degenerate parents cannot reasonably be expected to be perfectly healthy and hardy. The result of upwards of a century of mismanagement, cannot be entirely obliterated by the first step in the right direction.

The fact that pear seedlings are attacked by their parasite, may seem to many a serious objection to the conclusion I am induced to arrive at; but as plants annually raised from seeds are not exempt, I do not see why young plants of the pear should offer greater resistance, when exposed to influences which affect their health. I think it may also be questioned whether a plant whose average duration is supposed to be about 400 years, is not more susceptible of injury, or more easily affected by adverse atmospheric influences in the first few years of its existence, than when in the prime of its life. This seems to be the case with the Osage orange, at least,—but possibly this can hardly be considered a case in point, inasmuch as the difference in the power to withstand the severity of our winters, may be owing to the more concrete state in which I suspect the sap is deposited in the tissue of the wood during winter, in mature, as compared with young plants. A further question arises here, whether woody plants, when once attacked, do not afterwards become more under the control of their parasite. The first appearance of the fungus on Mr. Knight's pear trees, caused him no alarm, it being confined to spots on the leaves, but in after years the young wood also became affected, and perished.

The way in which parasitic fungi injure plants, is not, I believe, understood generally. They do not grow on the surface merely, of leaves, prevent perspiration, and thus cause death. They spring from the living tissue and destroy it. What we see of the plant externally, is merely the fructification—the plant itself, composed of minute, thread-like filaments, spawn or mycelium, as it is usually called, is concealed in the tissue. Now the contents of the cells of plants are various, as researches recently made by the aid of chemical reagents indicate; the mycelium of fungi has the power of piercing the cell walls. By thus rupturing the tissue the contents are set free, they are no longer under the control of vitality, hence chemical action ensues, putrefaction of the part attacked follows, morbid matter is thus generated, which circulates with the fluids of the plant, and gives rise to further unhealthy action.

In this matter as on so many other points, a close analogy seems to subsist between the

animal and vegetable worlds, the same law appears to prevail in both, that an unhealthy state of the larger plant as well as of the larger animal is the essential condition required for the attack and increase of parasites. "The different species of minute insects," observes Mr. Knight, "which feed upon the bodies of our domestic cattle, are scarcely ever seen, and never injurious so long as the larger animals retain their health and vigor; but when these become reduced by famine or disease, the insects multiply with enormous rapidity, and though they are at first only symptomatic of disease, they ultimately become the chief and primary cause. The reciprocal action of the larger plant and the mildew, upon each other, may be somewhat similar." (Knight's Phys. and Hort. papers, p. 208.)

I apprehend no further remarks are needed to prove that this is, as you observe, an important subject of investigation, and I would suggest in conclusion, whether some Horticultural Society, or the Pomological Congress would not do well by instituting a searching and systematic inquiry with a view to ascertain what are the causes which lead to attacks of fungi, and by what means they can be prevented or modified. It is well to reward the successful improver of the pear and other fruits as our Horticultural Societies now do; but how much greater would be the service rendered to horticulture, how much more profitably would be the money expended, if a means could be discovered which would enable us to grow in a healthy condition, those varieties we already possess, or may hereafter obtain? If the inquiry should be confined to the pear alone; the first steps to be taken would be to determine the name of the fungi. A few fresh infected leaves hermetically sealed in a light tin case might be transmitted by post to the first authority on these plants in this country, and to two or three distinguished cryptogamic botanists of Europe—say the Rev. M. J. Berkeley of England, Professor Morren of Belgium, or Dr. Montagne of France, not only with a view to ascertain the name of the parasite, but whether it exists in Europe, and if any means are there known to prevent its development or diminish it power. A plain and accurate description of the disease should then be drawn up, and distributed with a series of inquiries, in different parts of the states to individuals likely to afford useful and accurate information. The returns would show the geographical limits of the disease, the period of its development and its intensity in different parts. I append a few inquiries which have occurred to me.

1. Has this disease been observed by you in the locality where you now reside, and if so, how long has it been experienced?

2. When once developed has it ever entirely disappeared, and under what circumstances?

3. Are seedlings more liable to be attacked than grafted varieties?

4. Among grafted varieties do any uniformly offer greater resistance to the disease than others?

5. What is the character of the soil of your orchard or nursery, and if there is any difference in the quality, texture, moisture or dryness of the soil, are trees more free from disease in one part than another, and if so, which?

6. State the position of your orchard, whether on low ground or on the side of a hill, and whether you have observed in the same locality trees to be more exempt from disease in one position than another?

7. Are teees growing in damp shady places more affected than those in more exposed situations?

8. Does difference of aspect, as the north or south side of a hill, make any difference?

9. Are trees growing in grass less affected than those in cultivated lands?

10. Have you tried trenching or deep plowing an orchard or nursery, or where pear seeds were sown, and with what results?

11. Have you mulched newly planted as well as established trees, and have these been more exempt from the disease than others in the same orchard not mulched?

12. In a locality where the disease exists, are pear seedlings always healthy if raised in new land?

13. Have you steeped pear seeds in any solution previously to sowing, and with what success?

14. Have you pared and burned the surface soil intended for the seed bed?

15. Have you dusted flour of sulphur on infested leaves or shoots, or inserted a portion in a hole in the stem, or applied a weak solution of sulphuric acid to the soil around a diseased tree and with what results?

16. Have you applied any special manure to your trees, which exercised any marked influence, beneficial or otherwise?

17. Have you observed the character of the weather immediately preceeding the development of the fungi, and whether in the same or different seasons their growth and increase seemed to be favored with peculiar atmospheric influences?

18. Have you tried any experiments with a view to cure or prevent the disease, or can you supply any additional information calculated to throw light on the subject, and which is not comprised in these queries? Respectfully, J. Townley.

Moundville. Marquette co., Wis.

THE POTATO AND BUTTONWOOD DISEASES.

Dear Sir—After all the time that has elapsed since the potato disease made its appearance, and the many speculations that have appeared, pray inform me if anything is considered as settled on the subject? Is there any well ascertained cause for this malady? That there has been no certain remedy discovered, I am well aware, nor does it appear to me there is likely to be, so long as we remain wholly in the dark as to the origin or cause of the disease.

The same remarks apply to the disease under which the buttonwood still suffers in all parts of the country; I should say, perhaps, such as are not already killed by it. It is now some ten years since this disease made its appearance. At that time the plane tree, or buttonwood, (sycamore it is often incorrectly called,) was one of our fairest and most majestic forest and shade trees in all parts of the United States. At the present time, hundreds and thousands of the trees—many of them of fifty or sixty years growth—are entirely dead, most of the remainder are either half dead, or in the last stages of decline and debility, and it is a very rare thing, indeed, to find a healthy and luxuriant specimen anywhere in the Atlantic states. The loss of the plane tree is not such a positive loss to be counted in dollars and cents, as that of the potato crop, still it is worthy of being noticed, that one of the hardiest and most luxuriant of all our native forest trees, which has evidently never suffered in this way before, (vide, the fact that sound trees were to be found 200 years old, in a sound and healthy state before this malady,) should be a marked tree, to be visited by such a plague, while all the other trees of the forest remain healthy and vigorous. Can nothing be done for the sycamore? Will you, or some of your correspondents, throw a little light on the subject. Yours, A Constant Reader.

New-York, June, 1851.

Remarks.—We are sorry to be obliged to say, nothing satisfactory has yet been settled, regarding the nature of either of these disease or the remedy.

If our correspondent wishes us to add our speculation, to the pile of speculations already before the public, it is at his service.

We believe both the potato disease and the Sycamore malady to be not the same disease, but diseases owing their origin to causes quite similar. We think them both the result of an attack of the growing parts by peculiar fungi, the seeds of which are invisible to common eyesight, floating about in the air. Wherever these seeds of fungi light upon vegetation to which they have a natural affinity, they take root in the young vegetable tissue —propagate themselves and gradually destroy the healthy functions of the plant. In the potato, the fungus attacks the tops, but its decomposing influence is not confined there,—like mould—which is a species of fungus—its influence, so destructive to the life-tissues of the plant, penetrate to the root and appear there in the form of the *rot*. In the Sycamore, the smallest and tenderest young shoots are first attacked—the poison of the fungus thence gradually extends in a blackened filth-line down the branches, directly in connection with the young shoots, until at last the whole tree is poisoned—healthy vital action ceases, and the trunk dies. The fungus ripens its invisible seeds in these decaying plants and trees; these seeds floating in the air seize upon other healthy trees, and thus, little by little, the disease extends all over the country.

Some fifteen years ago, Buttonwood disease appeared at the South. Ten years ago it began to be fatal in Philadelphia. At that time it had not reached New-York, where the trees were still green and flourishing. It gradually spread northward, it has since reached Canada and will extend all over the continent. The only mitigation of it seems to be in severely heading back the whole top of such trees as are affected, boring a hole in the trunk, filling it with sulphur and plugging it up tightly. We have known trees so affected put out a new head and recover a healthy appearance again. But there is now little doubt that the disease will exterminate the present generation of Plane or Buttonwood trees from the United States altogether. It is a little curious that the plane tree of Europe (*Platanus orientalis*,) though so closely resembling our native buttonwood, is not liable to the disease though standing near affected trees. We have had an opportunity of observing this in our own grounds, and were told in England last year, that a long time ago this very plane tree disease appeared in England and swept off most of the *American* species (*P. occidentalis*,) while the European plane tree remained untouched. Such being the case and the growth of the oriental plane being the more ornamental of the two, no one will plant our native species for the present—but select the oriental and especially the *pyramidal* plane tree, now to be had in some of the nurseries.

The potato disease has extended gradually but rapidly in the same manner all over the world. At the present time its effects have raised the price of potatoes, as an article of food for winter use, nearly four-fold in many parts of the Union.

We notice that recommendations have lately been made of the use of powdered *sulphur* in the hills when planting. If it could be sufficiently pulverised and divided by mixing it with ashes or some such substance to render its use feasible in an economical point of view, we should think it more likely to answer the purpose than any other substance—simply because we know that sulphur is the only remedy for certain kinds of mildew and blight—the result of the attack of fungi—yet successfully applied. The chief point, therefore, the remedy being known, is to discover how to apply it with practical benefit.

And how is it that these fungi suddenly make their appearance all at once and spread all over the earth—readers will naturally ask? It is not easily answered, the most pro-

bable solution seems to be that they are the result of some electrive agency, and are deposited on the earth by its agency. The phenomena of *colored rain*, which has been observed and carefully examined by naturalists in various parts of the world, seems to us to have some relation to those mysterious and sudden eruptions of vegetable disease. In many cases recorded in the Journal of Science, this rain has fallen when the sky was unclouded—showing its direct dependance upon electric phenomena. In 1845 a shower of inky black rain fell in a district in England, and was believed there to be the origin of the potato disease. Prof. BAILEY, of West Point, one of our closest microscopic naturalists, has recorded two instances of colored rain which have fallen in this country, in Silliman's Journal. His analysis of this rain showed it to be composed mainly of the pollen of Pine trees—but an analysis of some colored rain which fell in England, in 1849, showed distinctly the spores of fungi. The whole subject is still far from being understood, but it is one which is taking a shape so serious to the cultivation of the soil, that men of science should bestow more attention upon it

NOTICES OF NEW PLANTS.

HABROTHAMNUS ELEGANS.—We must commend this showy and beautiful summer blooming plant, to the attention of our floricultural readers. It is a native of Mexico,

and though as yet only kept in green-houses in winter, it is likely to prove hardy at the root if covered with a foot or two of leaves and litter at the approach of winter. Young plants a foot or two high, turned out into a rich deep border, will grow three or four feet high during the summer, and bloom continual from July to November. The plant is of

luxuriant growth, and the ends of all the young shoots are loaded with clusters of trumpet or tuber-shaped blossoms, of the finest lake or dark carmine color. Altogether, it may be looked upon as a decided acquisition.

This species of Habrothamnus has only lately been introduced into this country, but it is easily propagated from cuttings, like all the *cestracea*—to which natural family it belongs. Young plants in pots, may be had of Messrs. Buist, of Philadelphia, and Messrs. Hogg or Thorburn, of New-York.

Macleania cordata.—A fine, green-house, evergreen shrub, growing three to four feet high, bearing opposite, oblong, lanceolated leaves, nearly three inches long, upon smooth upright branches. The flowers are bright red corolla tubes an inch long, with an open mouth of five segments of a yellow color. They are borne at the axils of the terminal roots, and contrasting with the rich evergreen foliage, have a fine effect. This plant belongs to the natural order Vacciniacæ, is a native of Chili, and flowers in summer.

Lucia Rosea Geranium.—This pretty variety of the dwarf scarlet geranium, bearing flowers of a fine *pink* color, has been propagated and disseminated considerably by our leading florists this spring. A bed of it in our own garden has been full of bloom for a month past, and appears to be a valuable budding plant for the parterre. It blooms more freely and abundantly here than in England—where it was originated—probably from the greater abundance of sunshine which both this and the Tom Thumb scarlet, like. It is very easily propagated by cuttings, like the scarlet varieties.

Berberis japonica.—We believe this fine new shrub—the Japanese Berberry, brought from China to England in 1849, by Mr. Fortune, has only just been introduced into the United States, and is not yet offered for sale by any of our nurserymen. It is a superb evergreen, with large Mahonic-like pinerated foliage—each leaf more than a foot long. This foliage is of thick leathery texture, and is armed with lateral spines. As it was found 150 miles north of Shanghae, it will undoubtedly prove perfectly hardy here. We believe the flowers are large and yellow, but they have not yet been produced, either in this country or in Europe.

Ceanothus papillosus, and C. dentatus.—Two beautiful little shrubs of the same general habit as the Jersey Tea, (*C. americanus*,) common in our woods, but with globular clusters and panicles of lovely azure blue blossoms, borne profusely all summer, and very ornamental whether grown in pots, in the conservatory, or in the open border. These plants, natives of California, are quite rare and new, having been introduced into England by the collector of the London Horticultural Society, Mr. Hartwig. They have stood the winter in England, and will probably do so here. Rich turfy loam, leaf mold, and silver sand, makes the soil they prefer.

Petunia—*Eclipse*.—This, the prettiest of all the new varieties of this popular border flower, we saw in England last year, has been propagated and sold extensively by Thorburn, of New-York, this season. The flowers are light rose, striped with rich purplish crimson, in the same style as Hebe, but much clearer and richer in the coloring. The form is good—not rag-like and coarse, like some of the new sorts lately sent out.

Petunias and Verbenas are the most valuable plants in American flower gardens, since they defy the sun—or rather luxuriate and bloom all the more freely in it. Among the best new verbenas of the season are Heroine—a handsome lilac blue—the tresses large and abundantly produced—and St. Marguerite, (a French variety received last year,) with shaded crimson flowers produced in abundance. A dozen new sorts promise well, but we need farther experience of their merits, to speak decidedly of them.

SUCCESSFUL EXPERIMENTS IN MULCHING.

BY W. R. COPPOCK, BUFFALO, N. Y.

Dear Sir—All facts tending to the improvement of practical results in the processes of gardening, are what are sought for by the readers of the *Horticulturist*, &c. And although much creeps into our magazines that is desultory, and of accidental origin, oftimes misleading the anxious inquirer, to the neglect of sound practical and philosophical operations, yet it is to them reference must be had, if we would keep up with the spirit of the age, and reap the advantages that are daily being developed in this subject.

Heretofore, we have been but copyists—of great schools we admit—but whose chief greatness lay in the adaptation of their genius to the peculiarities of the climate they originated in. Their processes in the acclimation of plants—the art of propagating,—systems of pruning, and the routine of tree and vegetable culture, has attained the acme of perfection, which we, having reference only to the details, have closely followed; any innovation from those standard authorities being looked upon as doubtful, if not altogether futile in purpose.

That the spirit of horticulture has received an impetus with its kindred sciences, needs no demonstration here. The nation is alive to the subject, and throughout our land the features of embellished nature are beginning to attract the eye of the traveler, and delight the lover of rural refinement.

The peculiarities of climate, superinduce specific methods, whether in reference to animate or inanimate things. Thus we find animals of a colder or higher country, cannot be safely treated in their accustomed method, when transferred to a hotter country, or to lower grounds.

The same facts apply to plants under similar removal. Even on the same isothermal line do we find prominent deviations. The quality of *constitution* is inherent in all organised beings; and in no wise is that feature of life less marked in the vegetable than in the animal kingdom. Hence the treatment of hybrid and cross-bred varieties of plants, cannot be successfully attained in these varied localities, without modified adaptedness to constitution and habit. Herein, then, lies the great study of horticulture. The analytical structure of soils for specific purposes—the altitude, aspect and position, for one class —dryness or moisture for another—the nature and effect of special manures, in ameliorating what are termed worn out soils—the peculiar effects of climate and hybridization upon vitality and longevity—specific analysis of the various trees composing che circle of hardy fruit culture—and last, though not least, a strict inquiry into the habits of all those insects depredatory upon fruits and trees.

My design in this paper is not to inflict upon you an elaborate essay upon these subjects, but to simply make known the results of some few practical results on the subject of *mulching* trees—a practice which I believe will be found indispensably necessary to the successful growth of many plants, and especially those of large fleshed varieties; such plants are usually loose in their tissues, making growth rapidly during the rainy season. This season of luxuriant growth, followed by our hot and dry summers, subject fruit culture to serious ills, such as scalding, or spongy and blighted wood, as in the apple and pear, and to drying and then bursting of the bark, as in the cherry, plum, and peach, causing the exudation of gums, and its attendant diseases. Such trees, and especially those recently transplanted, are highly benefitted by checking the too rapid transpiration through the bark, by a loose bandage of straw or *hay ropes*. The latter can be readily made in any

desirable length or thickness, by hitching the first loop to the axle of a grindstone or other crank, and feeding as in making common rope. And inch and a half for large, and an inch in thickness for small trees, are the sizes I find most suitable. They are put on the trees by beginning with a half-hitch at the bottom and winding upward, merely tight enough to hold their position. These ropes, by shading the bark from a scorching sun—keep the sap cool and healthful, without depriving it of the necessary circulation of air. Of a row of standard pear trees planted in the early spring, those thus treated are at this time full three weeks in advance of others not rope-wound. Of cherries, the rope-wound trees are fresher and fuller of foliage, with fruit in abundance now swelling, while those not wound have made but little growth, and have not set a fruit. The same difference is observable on the plum and peach. I am thus far, fully persuaded of its salutary influence, and that it will effectually check the bursting of the bark, and the guming of stone fruits, from which they rarely long survive. This experiment has been successively made for many seasons, the present embracing more than a hundred trees. I would add, also, the roots of all are mulched with spent tan, to a circumference at least equal with the top.

Mulching Trees.—It is surprising to witness the difference between the growth of trees, and especially the dwarf pear trees, from the effects of mulching the roots. Such trees I have found to have made masses of fibrous roots in a single season, nearly if not quite double to others similarly situated in every respect, but without the mulching.

So long as our tree propagators will determine to grow their trees for market, with long and bare stems five to seven feet high, before heading them in while in the nursery rows, it may be a settled axiom, that such trees will not do without strawing and mulching. Every season proves this in the loss of multitudes of beautiful and apparently thrifty bearing trees, especially among the cherry and peach. A neighboring friend whose cherries have long been the admiration of all observers, from their fine fruit and luxuriant habit, is fast losing his stock from this cause. The bursting and exudation of the gum poisoning the surrounding parts—stopping the pores of the bark below, and forming a mass of flint like substance, which gradually increases until the cellular tissues are entirely blocked up, when the tree dies.

That this malady is produced by the action of the sun, and other external causes, upon the long and naked trunk, there can be no doubt. The outer bark hardens to such an extent, that its expansion, does not keep pace with the growing tissues beneath—a vent for the over accumulating sap is a necessary result. Strawing or shading the stem will remedy this, as the outer bark is then kept in the same progress of growth as are the inner. The barbarous custom of slitting, will oft times produce relief—but when cut too deep produces the same disease.

Mulching Strawberries.—In a former number of the Horticulturist I detailed some experiments on the virtues of spent tan, as tested by many years experience. Those remarks having elicited many inquiries from strawberry growers, allow me to add, yet another valuable feature in its use, viz: earliness in fruiting without forcing.

There is not by the concurrent testimony of many individuals comprising the Buffalo Horticultural Society, a strawberry within their grounds (June 4th) more than a third grown, and generally yet merely blossoming—while from my mulched beds of the varieties, Early Scarlet, Hovey's Seedling, Burr's Seedling and Necked Pine, we have gathered *ripe* fruit from the first of June. The whole crop is ripening and coloring well, and is at least two weeks in advance of those in ordinary culture. The plants show great vigor in foliage and fruit. On stools, which were runners planted in May last year, an hundred and twenty berries were counted on many of them. Here then is a valuable fruit easily

obtained, no other means or protection being needful save a deep and rich soil (clay loam) with an inch and half covering of spent tan direct from the vat.

When strawberries are thus mulched with tan, it is easy to see that the winter frosts penetrate far less deeply into the ground—the roots are not torn or otherwise injured by the upheaval of frosty weather; the warm rays of the sun penetrate to the roots during March and April; while the soil collects and retains its heat greatly by the aid of the mulch, and the warmth arising from the increased temperature of the tan, hastens the swelling and ripening of the fruit. Your obt. W. R. Coppock.

Black Rock, June 6, 1851.

[We can add our testimony to Mr. Coppock's, as to the value of mulching trees generally, and of tan mulching in particular, as admirably adapted to the strawberry. We covered some strawberry beds last autumn about two inches deep with tan, and found them this spring in the finest possible condition—far better than beds covered with straw, litter, or leaves. The tan seems specifically adapted as a constant covering for the strawberry beds, the fruit and the foliage both being decidedly improved by it—though we have not found in our own experiments much gain in the earliness of ripening. Ed.]

PROPAGATION OF ROSES BY CUTTINGS.*

BY R. P. DRUMMOND.

It is generally believed by amateurs and others, that Moss, Provins, French, Damask, and Bourbon Roses, &c., are difficult to increase by cuttings; but by the following method, these sorts may be raised in abundance. Let a bed of well-fermented stable litter and leaves be made by the side of a north wall, and place a one or two-light frame on it so as to face the north. In this put about eight inches of leaf-mould that has been previously well soaked with water; then spread over all about three inches of sharp pit sand, and make the whole firm and level. The back part of a span-roofed pit, running east and west, with a wall in the centre, is also a suitable place for the purpose. It should be filled to within a few inches of the glass with the same kind of material. In selecting the cuttings, tolerably weak wood of the present year's growth should be taken, if it is sufficiently ripened at the base or has made one full-formed leaf. Strip the cuttings with the finger and thumb, and smooth the base, reserving the detached portion of the parent bark; cut them close above the first leaf, and insert them in the sand, but not so thick as that their leaves will overlap one another. When this is finished, the bed should be watered, to settle the soil about them, and they should have plenty of air for the first four days; but it ought to be lessened by degrees, so as to gradually inure them to a confined atmosphere. As the preservation of their leaves in a healthy state is essential to success, the bed may be formed, and the cuttings put in on the same day, without waiting until the material becomes heated, as a thin covering of cellular tissue should be formed over the wounded end of the cutting before that takes place. In the third week the greater part will be rooted, and in the fourth they should be potted off into 60-sized pots, in a soil composed of leaf-mould and loam. They should be afterwards removed into a damp frame or pit, without any water being given to their roots; but they may be slightly syringed over their leaves, and when they become well rooted in the new soil, they may be hardened off and either shifted into larger sized pots or planted out in a sheltered border, where

* From the Gardeners' Chronicle.

they will make fine plants for next year. By again levelling the surface of the beds, and making the cuttings to two eyes—always preserving one leaf, Tea-scented China, Noisette and Boursault Roses, &c., will root freely in it without any further preparation; but if a considerable quantity of the first named sorts are required, either the old beds should be taken down, and a little fresh fermented dung added, or a new one should be made, using the same sort of materials as are recommended above. The young wood should be taken before the blooms are expanded, and the cuttings prepared similar to what I have already described. The young shoots of what is called the second growth, may also be used for cuttings; they should be taken when two full-formed leaves are made, smoothed at the base, and cut down to the first leaf, then planted in a bed of the same construction as above. When they are rooted, they may be hardened off and allowed to remain in the bed until spring. Plenty of air in favorable weather should be admitted. In this way they will occupy less room than when placed in pots, and they will stand the winter better. Cuttings of Roses, like those of many other hard-wooded plants, are more certain of rooting when they are made short, especially if a healthy leaf is attached to them and kept there until they are rooted. This, however, can never be accomplished if the soil in which they are placed is subjected to the alternate action of wet and drouth; but by placing wet leaf-mould between the dung and sand, an uninterrupted supply of moisture is obtained, and no water is required from the time the cuttings are put in till they are rooted in the pots. So suitable is this treatment, that when the bud at the axil of the leaf has been damaged, or otherwise abortive, those at the root are excited, and suckers are produced. All kinds of Roses will root freely under this treatment.

R. P. Drummond.

Review.

The Fruit Garden; by P. Barry, *of the Mount-Hope Nurseries, Rochester, N. Y.* One vol. 8vo., 398 pages. (*Charles Scribner*, New-York.)

Since the issue of the first edition of our work on Fruit Trees, in 1845, *twelve editions* of that work have been published and disseminated in every part of this country, and in some parts of Europe—and the sale continues unabated to this day. Since that time various smaller works have been issued from the press, and have also met with an extensive sale. The present volume, by Mr. Barry, the well-known Rochester nurseryman, has the last and freshest contributions to the subject, and is, we think, the best of the smaller works. It does not profess to be a comprehensive work on Pomology, to which the reader is to look for complete descriptions of Fruits, since it only offers brief abridged descriptions of select varieties. It takes, however, a different and distinct ground from the other works, namely, to teach "the art of planting fifty trees on an acre of ground, and bringing them into a fruitful state in four or five years." In other words, it is written to be the hand-book of amateurs who wish to cultivate with care and skill, a few fruit trees, in a fruit garden, rather than orchard cultivators, whose operations are pursued on a wider scale, and with less labor bestowed on the detail of their operations.

The book is written in a clear, straight-forward, common-sense style, and bears the marks everywhere, of the practical cultivator who understands his subject. Of course, a large part of it is occupied with brief accounts of the modes of propagation, budding, grafting, layering, &c., in which, of course, we find little or nothing that is new to those

in possession of works already published—but the author explains these operations afresh, in a concise, graphic, and agreeable manner.

The point in which Mr. BARRY'S work mainly differs from other works published in this country, and in which it is a decided improvement upon them, is one that we naturally expected, both from its title, and its later date. We mean, of course, PRUNING. Most of the works on Fruits, hitherto, have been intended mainly, either for orchard planters who allow their trees to take the natural form of standards, in which pruning is a matter rather to be avoided than insisted upon, in this climate; or else for cultivators with smaller space, whose limited time and means does not permit them to indulge in any of the special refinements of the art of horticulture, in the way of training or pruning trees—the methods generally practiced in the gardens of Europe, where labor is so vastly cheaper. The fact, too, that almost all the fruits of temperate climates bear excellent crops in many parts of the United States, with the simple conditions of a good soil and abundant air and light, has had a tendency to retard the introduction of what may be called the refinements of fruit culture as practiced abroad—viz: the pruning and training fruit trees as dwarfs, standards, pyramids, espaliers, and a dozen fanciful modes, some of which greatly add to their productiveness and value, while others are highly ornamental features in the fruit garden. The great value of these improved modes of training and pruning, is, indeed, not for the million, who plant fruit trees solely for the sake of getting fruit, with the least possible expenditure of labor or money on their part, but for the few who wish to get superior fruit by superior and improved modes of cultivation, and who take that kind of personal interest in their fruit garden, that makes daily attention to the growth of a tree, a source of continual pleasure and satisfaction.

No horticulturists at the present time, understand the art of pruning so thoroughly as the French, as we had ample opportunity of ascertaining by personal inspection last year. Mr. BARRY'S enthusiam on the subject of dwarf trees, pyramids and espaliers, was awakened by the same sight, and he accordingly gives his readers ample details, based on his own observation of the whole system of "*pinching*," and the cutting back of the young shoots—which constitutes the pith and marrow of the French mode—a system which we are forced to say is the best possible mode of pruning, since it *directs* the subject in the way it should go by means of foreseeing its future capacities and character, instead of allowing all growth to go at random generally, but occasionally coming down on the poor creature with a terrible onslaught of saw and knife, to the permanent injury of the constistution of the tree.

Our amateur readers who have carefully read the previous volumes of this Journal, are acquainted with the secrets of the pinching and shortening-back modes of pruning which lie at the bottom of the French practice, but they will also find Mr. BARRY'S work a most convenient hand-book of reference, when busy with the details of the art.

The author of the Fruit Garden very properly places M. DUBREUIL, the French Professor of Arboriculture, at the head of the masters of the art of pruning, at the present day, and quotes at length from that author the following admirable *expose* of his principles of pruning, which we copy here for the perusal and study of our readers interested in this subject:

"The theory of the pruning of fruit trees rests on the following six general principles:

"1. *The vigor of a tree, subject to pruning, depends, in a great measure, on the equal distribution of sap in all its branches.*

"In fruit trees abandoned to themselves, the sap is equally distributed in the different

parts without any other aid than nature, because the tree assumes the form most in harmony with the natural tendency of the sap.*

"But in those submitted to pruning, it is different; the forms imposed on them, such as espalier, pyramid, vase, &c., change more or less the normal direction of the sap, and prevent it from taking the form proper to its species. Thus nearly all the forms given to trees require the development of ramifications more or less numerous, and of greater or less dimensions at the base of the stem. And, as the sap tends by preference towards the summit of the tree, it happens that, unless great care be taken, the branches at the base become feeble, and finally dry up, and the form intended to be obtained disappears, to be replaced by the natural form, that is a stem or a trunk with a branching head. It is then indispensable, if we wish to preserve the form we impose upon trees, to employ certain means, by the aid of which the natural direction of the sap can be changed and directed towards the points where we wish to obtain the most vigorous growth. To do this we must arrest vegetation in the parts to which the sap is carried in too great abundance, and on the contrary favor the parts that do not receive enough. To accomplish this the following means must be successively employed.

"1. *Prune the branches of the most vigorous parts very short, and those of the weak parts long.* We know that the sap is attracted by the leaves. The removal of a large number of wood-buds from the vigorous parts, deprives these parts of the leaves which these buds would have produced; consequently the sap is attracted there in less quantities, and the growth thereby diminished. The feeble parts being pruned long, present a great number of buds, which produce a large surface of leaves, and these attract the sap and acquire a vigorous growth. This principle holds good in all trees, under whatever form they may be conducted.

"2. *Leave a large quantity of fruit on the strong part, and remove the whole, or greater part, from the feeble.* We know already that the fruit has the property of attracting to it the sap from the roots, and of employing it entirely to its own growth. The necessary result of this is, what we are about to point out, viz: that all the sap which arrives in the strong parts, will be absorbed by the fruits, and the wood there, in consequence, will make but little growth, while on the feeble part, deprived of fruits, the sap will all be appropriated by the growing parts, and they will increase in size and strength.

"3. *Bend the strong parts and keep the weak erect.* The more erect the branches and stem are, the greater will be the flow of sap to the growing parts; hence, the feeble parts being erect, attract much more sap than the strong parts inclined, and, consequently, make a more vigorous growth, and soon recover their balance. This remedy is more especially applied to espalier trees.

"4. *Remove from the vigorous parts the superfluous shoots as early in the season as possible, and from the feeble parts as late as possible.* The fewer the number of young shoots there are on a branch, the fewer there are of leaves, and consequently the less is the sap attracted there. Hence, in leaving the young shoots on the feeble part, their leaves attract the sap there, and induce a vigorous growth.

"5. *Pinch early the soft extremities of the shoots on the vigorous parts, and as late as possible on the feeble parts, excepting always any shoots which may be too vigorous for their position.* By thus pinching early the strong part, the flow of sap to that point is checked, and naturally turns to the growing parts that have not been pinched; this remedy is applicable to trees in all forms.

"6. *Lay in the strong shoots on the trellis early, and leave the feeble parts loose as long as possible.* Laying in the strong parts obstructs the circulation of the sap in them, and consequently favors the weak parts that are loose. This is only applicable to espaliers.

"7. *In espalier trees, giving the feeble parts the benefits of the light, and confining the strong parts more in the shade, restores a balance,* for light is the agent which enables leaves to perform their functions and their action on the roots, and the parts receiving the greatest proportion of it acquire the most vigorous development.

2. "*The sap acts with greater force and produces more vigorous growth on a branch or shoot pruned short, than on one pruned long.* This is easily explained. The sap acting on two buds must evidently produce a greater development of wood on them, than if it were divided between fifteen or twenty buds.

* This is not in all cases true. Peach trees, we know, left to themselves, exhibit a very striking example of the unequal distribution of the sap. The ends of the branches attract nearly the whole, leaving the lateral shoots and lower parts to die out. In other species, similar instances might be quoted, and as a general thing, the proposition is unsound, except in a comparative sense.

"It follows from this, that if we wish to obtain wood branches, we prune short, for vigorous shoots produce few fruit buds. On the contrary, if we wish to obtain fruit branches, we prune long, because the most slender or feeble shoots are the most disposed to fruit.

"Another application of this principle is to prune short for a year or two, such trees or parts as have become enfeebled by overbearing. (This principle deserves especial attention, as its application is of great importance.)

3. "*The sap tending always to the extremities of the shoots causes the terminal bud to push with greater vigor than the laterals.* According to this principle, when we wish a prolongment of a stem or branch, we should prune to a vigorous wood bud, and leave no production that can interfere with the action of the sap on it.

4. "*The more the sap is obstructed in its circulation, the more likely it will be to produce fruit buds.* This principle is founded on a fact to which we have already had occasion to refer, viz: that the sap circulating slowly is subjected to a more complete elaboration in the tissues of the tree, and becomes better adapted to the formation of fruit buds.

"This principle can be applied to produce the following result: When we wish to produce fruit buds on a branch, we prevent a free circulation of the sap by bending the branches, or by making annular or circular incisions on it; and on the contrary, when we wish to change a fruit branch into a wood branch, we give it a vertical position, or prune it to two or three buds, on which we concentrate the action of the sap and thus induce their vigorous development.

5. "*The leaves serve to prepare the sap absorbed by the roots for the nourishment of the tree, and aid the formation of buds on the shoots, All trees, therefore, deprived of their leaves are liable to perish.* This principle shows how dangerous it is to remove a large quantity of leaves from trees, under the pretext of aiding the growth or ripening of fruits, for the leaves are the nourishing organs, and the trees deprived of them cannot continue to grow, neither can the fruit; and the branches so stripped will have feeble, ill-formed buds, which will, the following year, produce a weak and sickly growth.

6. "*Where the buds of any shoot or branch do not develope before the age of two years, they can only be forced into activity by a very close pruning, and in some cases, as the peach, this even will often fail.* This last principle shows the importance of pruning the main branches of espaliers particularly, so as to ensure the development of the buds of their successive sections, and to preserve well the side shoots thus produced, for without this, the interior of the tree will become naked and unproductive, and a remedy will be very difficult."

The nicer operations of pruning and training are taught in France by means of lectures, with the trees before the pupils—the only rapid mode of teaching a practical art somewhat difficult of explanation upon paper. If our different states would establish agricultural schools, as they should do, the teacher of practical horticulture should have the whole modern art of pruning fruit trees at his fingers ends, and every pupil would, by the aid of a few specimens in different stages of growth, and a few small subjects to operate upon with the pruning-knife, soon become an accomplished master of the art. It is something, however, that must be pursued *con amore*. Mr. BARRY very properly says: "It is not, by any means, *labor* that is required, but attention, that the most delicate hand can perform; fifteen or twenty minutes at a time, say three times a week, during active growth, will be sufficient to examine every shoot on a moderate collection of garden trees; for the eye very soon becomes trained so well to the work, that a glance at a tree will detect the parts that are either too strong or too weak, or that in any way require attention. This is one of the most interesting features in the management of garden trees. We are never allowed to forget them. From day to day they require some attention, and offer some new point of interest that attracts us to them, and augments our solicitude for their prosperity, until it actually grows into enthusiasm."

Though Mr. BARRY is in many parts of the work plain and perspicuous, yet in others he glances so hastily and in so general a manner at important operations of culture, as to leave the majority of readers for whom his work is intended, somewhat in the dark. For

instance, *root pruning* is occasionally of great value as a remedial process in checking the growth of our luxuriant fruit trees, and bringing them into a bearing state. The following are the author's whole remarks on the subject:

"PRUNING THE ROOTS.—This is practiced as well to promote fruitfulness as to lessen the dimensions of trees. The roots, as has been shown, are the organs that absorb from the ground the principal food of the tree, and in proportion to their number, size and activity, other things being equal, is the vigor and growth of the stem and branches. Hence, when a tree is deprived of a certain portion of its roots, its supply of food from the soil is lessened, growth is checked, the sap moves along in its channels, is better elaborated in its leaves, and the young branches and buds begin to assume a fruitful character.

Roots are also pruned to prevent them from penetrating too deeply into the earth, and induce the formation of lateral roots near the surface, similar to the cutting back of a stem to produce lateral branches; the principal is the same."

Not a word is said as to the manner of performing the operation; how much of the roots of a young or old tree may be judiciously cut off; the best season of performing the operation, etc. Now, as root pruning is a far more dangerous operation in the hands of a novice, than any other kind of pruning, it seems to us a great oversight in a work in which the little details of practical culture are professedly entered into, merely to state the principle of the thing, and leave the operator wholly in the dark as to its practice.

Mr. BARRY is very non-committal and vague on the subject of diseases of fruit trees. The yellows "is supposed to arise from negligent cultivation." The pear blight may be "owing to an insect, a fungus, or some atmospherical cause," etc. We know it is far easier to take this ground than to risk one's reputation on points where there are so many different opinions—but readers do not gain much of an addition to their previous stock of knowledge by it. Quite contrary to our observation and experience, Mr. BARRY is of opinion that "to avoid the evil effects of the pear blight, the great point is to get a *rapid vigorous growth* before midsummer, when it usually happens." To get the growth before midsummer is certainly important, since a late growth is so frequently caught immature at the approach of winter, and suffers thereby, either in frost-blight, or in some other way —but we had considered it a pretty well settled point among American fruit growers who have studied this subject, that the great desideratum to *prevent* blight, is to place the tree in a condition where all "rapid and vigorous growth"—a growth always most liable to disease, and especially to the blight—should be especially guarded against, and a *moderate growth* of well-formed, short jointed wood, secured. It is because of the luxuriant growth of the pear on the rich deep soils of the west, that the blight is ten times more frequent and destructive there, than in eastern gardens, and it is because such varieties as the Seckel never incline to make a luxuriant growth, that they escape the blight that preys upon the more succulent and luxuriant shoots that are almost always found on some other varieties.

But we will undertake no more of fault-finding. We welcome Mr. BARRY's book as in the main, one of sterling merit, abounding with excellent rules of practice, and a valuable hand-book for every real amateur of the fruit garden.

Domestic Notices.

Unnoticed Characteristics.—Among the peculiarities of well known plants which we do not remember to have seen noticed in any of the books, are the following:

The flowers of the *Bignonia capreolata*, (buff or tawny flowered trumpet vine of the south—a handsome climbing shrub, very distinct from the common trumpet creeper which has bloomed finely in our garden, in the open border trained to a pole,) have precisely the odor of *liquorice*.

The flowers of the Umbrella Magnolia, (*M. tri elata*,) open regularly about four o'clock in the afternoon. This tree should be planted on the lawn, so that the effect of the flowers and foliage can be seen at a distance of fifty or 100 feet. Near by the flowers look coarse—but seen at a distance, each blossom set in its terminal tuft of broad foliage, they suggest water lilies in ther peculiar way. This tropical-looking magnolia will grow as far north as the Isabella grape ripens, and it needs only a rich loamy soil to thrive well; it deserves to be more extensively planted than it is at present.

Cryptomeria japonica.—Mr. Buist informs us that this tree, which has been twice noticed in our pages, as not being hardy about New-York, is perfectly hardy at Philadelphia, and has ripened seeds there. We have seen a specimen lately in the grounds at Wodenethe, the seat of our neighbor H. W. Sargent, Esq., which has stood the past winter quite uninjured, and is now very healthy. It is not improbable that grafted upon some of our native Junipers, the Cryptomeria may prove entirely hardy.

Bohemian Olive.—Dr. Valk, of Flushing, Long Island, informs us that the *Oleagnus parviflorus*, sometimes called the Bohemian Olive, proves to be a hardy shrub in his garden. The following extract from his letter will interest our arboricultural readers:

"I would bring to your notice a very fine plant in my garden—and I believe a very rare one on this side of the Atlantic—the *Oleagnus parviflorus*. I received it when very young from the garden of the London Hort. Society, and planted it immediately in the open ground, where it has grown to a large bush, and now bears every season a heavy crop of fruit. This fruit is pretty in appearance, and pleasant in flavor. The shrub is a native of Bohemia, and I think might be very much increased in size by judicious cultivation. Its English name is, I think, the Bohemian Olive.

My Deodar Cedar has grown luxuriantly; is now ten feet high, and beautifully feathered to the ground. It has been planted and fully exposed four winters, and is not exceeded in beauty by any of its kindred evergreens." Yours, W. W. V.

A Special Manure for Evergreens.—It is well known that most evergreens are impatient of the ordinary animal manures, applied with so much benefit to deciduous trees, and the zealous cultivator is often at a loss to know how to urge the slower sorts of firs, pines, &c., to a more luxuriant growth.

We have experimented a little on this subject, and think we have found a most valuable stimulant for all rare evergreen trees in ornamental plantations.

Two years ago, the Lodi Manufacturing Co., Liberty-st., New-York, (whose excellent poudrette, we have already recommended,) sent us for trial a cask of "manure for shrubs and trees," requesting us to make trial of it. It presents to the eye the appearance of a finely pulverized gray powder, and is quite dry to the touch. We applied it to a variety of trees and shrubs; in the majority of cases it seemed to act simply as a good manure, with no effects in any way remarkable. But to our surprise it acts mosts distinctly and beneficially upon all *evergreens*. Pines, Firs, Deodars and Spruces, that had made but a feeble growth for some seasons, when liberally dressed with this mixture, put on a darker green and made more luxuriant shoots than they had ever done previously. Encouraged by this we used the mixture liberally, in planting young evergreens the past spring—mixing three or four shovelfuls to the soil used in planting young Deodars, Araucarias, and the like. The effect was very soon

perceptible in the darker hue of the foliage, and now, at midsummer, in the greater luxuriance of the growth. We have no hesitation in recommending this "manure for shrubs," as a capital top-dresser for evergreen plantations, and as an especially valuable manure for using in the process of transplanting evergreens. We understand it consists of a small quantity of poudrette, and a considerable portion of mineral manures adapted to the growth of trees generally.

SEVENTEEN YEAR LOCUSTS.—The hum of this singular insect fills the woods and gardens of Maryland at the present time, and the country there is alive with them. Though the Seventeen year Locust only appears during this long interval, the people of the districts favored by the visitation, congratulate themselves that the visits are so few and far between—for neither the ceaseless drone of the insect, nor the havoc it causes in ploughing up the young branches of trees, are among the pleasant experiences of country life.

It is a mistake of many persons to suppose this insect feeds upon vegetation. It feeds upon nothing during its three or four weeks of existence above ground, but is occupied solely with paring, singing its song, (or more correctly *beating its drum*—which is really the way in which the sound is made,) and laying its eggs in the tender branches of the trees. These young branches, which finally strew the ground beneath the trees, fall from the trees, broken by the winds at the weak place made by the punctures of the female in laying her eggs —and are not eaten off by the insects as many suppose. The actual food of the Seventeen Year Locust is made long beforehand, and consists of the *roots* of trees, as it appears by the careful examination of naturalists. Miss MORRIS, of Germantown, well known for her investigation of insect habits, has well settled the point that these locusts are a busy devourer of the roots of trees when they descend and take up their long abode underground. She thinks, from examination of the roots of many trees in the locust districts, that the larvæ do more harm upon the roots of trees in this way, than the full grown insects do upon the branches. Doubtless many a fine tree, whose decline is a source of surprise and perplexity to the cultivator, is the prey of these creatures at the root.

Fortunately the *Cicada Septendecem* does not occur all over the country at once—but in different portions upon different years. There is no longer any question, however, as to the fact that each brood remains seventeen years under the surface of the earth. The insect is not a true locust like our annual insect of that name, or those which ravage the East, devouring the herbage, but a *Cicada* or larvent fly—equally as large and a good deal resembling a true locust.

HEALTHY APRICOT TREES.—*Dear Sir*—Observing the weight you give to shielding tender trees from the sun in summer, and rapid freezing and thawing in winter, I was induced to apply the practice to my apricot trees—the only fruit trees that uniformly have baffled my attempts at successful cultivation. The trouble with this tree, as many of your readers must be aware, is that it "goes off" very suddenly, and usually some time between the exfoliation and the beginning of summer. There can be little doubt that this is owing to the effects of heat and cold upon the bark—as you have pointed out. To guard against it I have employed old cotton bagging, a material easily and cheaply obtained by those who live near cities. I cleaned the bark with soft-soap, and dipped the cloth just before using, into a thin white-wash, both to preserve it and prevent it from harboring insects. I then tied it loosely but neatly round the stem and the larger and lower part of the branches. This has been upon the trees three years and now requires renewing. It has answered the purpose well. The trees are remarkably healthy, and both foliage and fruit have been unusually large. Not one of the trees so covered has been attacked by the paralysis, common to the apricot, while others not covered, in an adjoining garden, have been dying off every season in the usual way. If you think the foregoing worthy of being printed, it is at your service. Yours, A. W. *Philadelphia, June*, 1851.

DAPHNE ODORA HARDY.—We are extremely glad to learn by the following extract from a letter from Mr. Thorburn that this plant has proved hardy on Long Island. There can be no doubt that Chinese azaleas, raised from seeds, and planted out in a shaded border while young, would also prove hardy, and what a beautiful ornament to the shrubbery and flower garden

they would be. There are still many plants in our green-houses that may be successfully naturalized.

The *Daphne odora* which I last autumn informed you had stood out all winter in the garden of Mr. Benner, has again proved its robustness, and has *flowered* this season. I consider this a valuable experiment, as it is making a garden shrub of what was hitherto considered a tender green-house plant, and which is certainly one of the most delicious of all plants in its fragant flowers. Yours truly, G. C. Thorburn. *Astoria, May* 28, 1851.

Preserving Cherries from Birds.—Dear Sir: If you or any of your readers ever "loved a tree or flower," and especially a cherry tree on your own premises, covered with a fine crop of particularly early fruit, which you had set your heart upon enjoying, only to see the spoiler come in the shape of a parcel of little cedar birds, or "ring tails," to make a desert of your cherries before you could get a fair chance to pronounce them ripe, you probably understand someting of the sufferings of such disappointed hopes. As these young Ishmaelites of "ring tails" make their breakfast on my Early Purple Guignes and Bauman's May every season, I have been a little provoked at them, and at last have succeeded in baffling them, by suspending three-cornered pieces of new bright tin, about as large as my hand, among the branches. These bits of tin may be had from the tin shops for a mere trifle, or if you take the refuse pieces—for nothing. Punch a hole in one corner, and suspend the tin by a piece of twine from one of the outer branches, so that it may swing freely. As it turns it will catch the light and sunshine, and frighten off the robbers. A neighbor, who never does things by halves, has improved on my mode by smearing a branch or two of each tree with bird-lime. This detains one or two of the little thieves now and then, til he makes a sign of distress, which, connected with the *awful* brightness of the tin, induces them to give the tree a "wider birth," as the sailors say. W. *Boston, June* 8, 1851.

The Curculio warfare.—If the curculio, as is generally believed, emerges from the ground, immediately under the tree whose fruit it destroys, might not the insect be thoroughly eradicated by *burning?* For example, the trunk could be protected by one or more old stove pipes, stuck in the ground at a little distance from the tree, and the *mellow soil* hoed up, and incorporated with saw dust, tanner's bark, or something similar, in proper quantity, which being set fire to, would destroy all insects, without penetrating to the roots of the tree. By doing this at the proper season, would not this pest be exterminated at once and for ever? George Leslie. *Toronto, Canada,* 26 *May,* 1851.

Not a bad suggestion for small gardens where there are but a few trees—and where the curculio does not migrate from other quarters. Ed.

Staminate Strwberries Productive.—In the may number of your Journal Mr. Longworth of Cincinnati, in an article on Grapes, says: "That neither Hovey's Seedling or the English Methven Scarlet, will produce half a crop, or bear perfect berries, if separated from all others."

He then goes on to say, that the same may be said of Burr's New Pine. Of the two first I cannot speak, never having cultivated them, but with regard to the New Pine he is certainly in error.

Two years ago I procured a few plants of the New Pine direct from the garden of Mr. Burr, in Columbus. They came into full bearing this year, and are now producing a very full crop of berries, of the largest and most perfect kind, without the assistance of "any others."

In this matter there can be no mistake, I never having grown any other variety of strawberry, nor are any other kinds cultivated within a *quarter of a mile* of my residence. S. H. Webb. *Newburgh, Ohio.*

[Such cases do sometimes occur, but our Cincinnati friends *ignore* them. Ed.]

Budding Roses.—Dear Sir: July is the month for budding roses, and I wish a little space among the Domestic Items to recommend this practice to rose amateurs. The common mode of budding rare roses on stocks near the ground is so familiar that it needs no mention here. What I would like to recommend to the readers of the Horticulturist is, the practice of budding ever blooming roses on the Prairie climbing roses. The effect is, I assure you very beautiful. You select, about the 10th or 15th of July, long, clean straight shoots, or

flourishing young side shoots, on your Prairie rose, which I will suppose trained to a pole ten feet high, or against a wall. You insert buds of the Bourbon and Noisette roses—or of the Perpetuals; I find the former the best. Next spring you head back the shoots to a point an inch or so above the buds that have taken. The vigor of the prairie stock soon forces these buds of the ever-blooming roses into luxuriant growth, and they will speedily be covered with flowers. By selecting half a dozen of the most striking colors and contrasts, and budding them at different heights on the Prairie climber, you have one of the richest pillars of roses conceivable—blooming more or less all the season. In pruning the pillar you do not sacrifice the Prairie rose itself—but allow it to bear a considerable number of its own flowers, only keeping down its strongest shoots, so as to throw the necessary amount of nourishment into the budded shoots.

I find the following varieties succeed admirably in this way. *Aimee Vibert*, (Noisette, pure white;) *Madam Desprez*, (Bourbon, deep rose-color, in large clusters;) *Malmaison*, (Bourbon, delicate blush white;) *Mrs. Bousanquet*, (China, creamy white;) *Bouquet de Flore*, (Bourbon, bright crimson.)

When the Prairie *mother* is a large plant and a strong grower, it is better to top back the shoots to within three or four buds above where the new bud is inserted, at the time of performing the operation. This throws more nourishment into the bud. It should not, however, be topped near the inserted bud, as that would force the latter into immediate growth, which is not desirable. Your Friend, *S. Philadelphia, June* 15, 1851.

Mass. Hort. Society.—We notice by the reports of the Exhibition, that J. F. Allen, Esq. of Salem, exhibited very fine hot-house grapes in six varieties, as early as the 31st of May. Messrs. Story and Hovey & Co., also exhibited fine grapes—the Wilmot's Black Hamburgh, of the latter, particularly good.

Col. Wilder made a very fine display of 120 blooms of Tree Pæonies—in all 18 varieties of this choice flowering shrub. J. S. Cabot, Esq. also exhibited nine choice varieties of the same. Messrs. Hovey exhibited 30 varieties of Chinese azaleas, and Messrs. Winship a very large collection of blooms of fine shrubs and herbaceous plants.

At the show on the 7th of June, Mr. Allen produced four varieties of Figs in perfect maturity—with Hunt's Tawny Nectarine, and a fine new cherry called "Ellen." There was also a good collection of grapes and other fruit from Messrs. Bowditch, Strong, Hovey & Co., and Williams. Mr. Lovett showed 15 mammoth stalks of the Victoria Rhubarb, weighing 24 lbs. Some of the stalks measured 45 inches long. Messrs. Winship showed 12 stalks weighing 16 lbs.

Mr. Downing—Sir: It is a rainy day, and therefore I can now send you my observations of this last winter and spring, with respect to my European grape-vines, and the grafts of European cuttings on the American wild stocks. Generally speaking, the grape-vine cuttings and rooted vines, planted very late last year, (indeed some as late as June, that escaped the great drouth during last summer,) are doing very well, and many of them have a fair average crop and promise well for the future.

The grafts of last year have, like the wild native grape-vines, put out about three weeks later than their parent European stocks; showing decidedly the positive influence of the wild native vine upon the European grafts, since their circulation has been retarded. Their wood is now already loaded with bunches of grapes in their embryo condition. This last February I have grafted about 100 more, and they are already nearly all putting out. To show you the great power of my wild vines, I may simply state that by my method of grafting, I have 31 grafts on one wild stock, and I have another that has sixty European grafts of many kinds.

In your remarks you stated that the grafts would not be influenced by the native wild stock on which I had grafted the European cuttings.* So far, my experience does not sustain your views; and I am glad to be able to say that nature and experience would not support your ideas.

I find that my experiment and views respecting the power of the *nurse stock* in modifying the habits of the nursling are neither singular nor original with me—that Compte Odart, that

* Our correspondent somewhat mistakes us. We know of course, that the habit of growth, etc., will be slightly modified by the stock—but the latter will fail to naturalize the foreign grape to our climate—the point desired. Ed.

great practical writer in his "*Ampilographie,*" or a treatise on the classification of the vine, at page 291, at the article "RAISIN DES DAMES," says: "This magnificent grape of a very beautiful yellow color, with very big ellipsoidal berries, has indeed some failings; it does not bear every year; its beautiful bunches are often very thinly furnished with berries owing to the blight of at least four-fifths of them, and their flavor is not very high; *I have found the means to remedy the blight,* (coulure,) *and this is by grafting it on* a common white Muscat."

I shall add to this statement of facts the opinion of one no less celebrated than l'Abbe ROZIER, as published in his 10th 4to. vol., page 248, of his complete treatise on agriculture. He says, "Grafting on the vine takes with so much ease, and *anasthimoses* so perfectly, that no other kind of plant appears better calculated by nature for this mode of improvement (*deperfection ;*) and they would have us believe that this operation deteriorates the quality of the grape while it improves that of other fruit! That is not possible. Graft the Muscat on a Chasselas, and then compare the quality of its fruit to that of the Muscat not grafted, and you will be forced to admit that the produce of the graft is superior; make the same trial with the Mourillon on a Chasselas and you will see that grafting *adds* to the quality of the grape." These, sir, are very important facts and worthy to be recorded in your valuable publication for the benefit of Horticulture. So you see that I was not so singular in my notions: if I err I am in good company. I may also state for your gratification, that one of the grafts of last year has on it about 100 bunches of grapes of remarkable sizes, and that the others have bunches in proportion to their size.

I have just read Mr. N. LONGWORTH's letter in your April number, and the facts he states in it, he had the kindness to communicate to me two years ago. I must, however, and with all due respect for that gentleman's valuable experience, *in Cincinnati,* remark that his experience and conclusions must be limited and confined to the latitude of his *locality.* Whilst my vineyard is located 6° farther south, and I may say very near and almost on a level with the ocean. Again my rolling land, the proximity of a river, a calcareous subsoil resting on beds of very rich white and grey marl, much of it mixed with abundance of oxides of iron and alumina, clay of every possible kind mixed in different proportions with gravel and silicious sand, green sand, muck, &c. &c., each and all of which have their share of influence in my trial. [Undoubtedly these are most favorable circumstances, and we shall be glad to hear of your success. ED.]

Now, sir, you may be able to judge and understand the difference and advantages of my locality over that of the environs of Cincinnati. To the 8° Fahrenheit, at least, difference in the temperature, I may add the warm quality of my soil and its hygroscopicity so favorable to the grape-vine, and which is also the best remedy for the rot. In consequence of it I was able to mature last year, even the Muscat de Frontignan in 145 days after the vine was first planted, and just after a long sea voyage. The minimum number of days, even in the south of France being 140, and the maximum about 160, with an accumulation of 6000° F. in that same space of time, with also the *indispensable* minimum temperature possible, that comports with the perfect growth of the vines. See Compte de Gasparin's book on agriculture, 4th 8vo. vol. Very resp'ly, JOSEPH TOGNO, Principal of the Vine Dresser Model School, near Wilmington, N. C. *April* 8, 1851.

A. J. DOWNING, Esq.—I enclose Adam's & Co.'s receipt for a box of Catawba wine, which I hope you will receive from me as a slight token of respect due to you for the interest you have taken in the grape culture of the west. Six bottles are Mr. LONGWORTH's sparkling Catawba, (the best of that kind made here as yet by any one,) and six of still wine from my own vineyard, vintage of 1849. I think my vintage of 1850 will be better.

We have ready sale here for the sparkling at $12 per dozen, and for the still at $6, of the best quality of course, inferior at less rates.

The great frost of the morning of the 2d of May, made a general sweep of all the fruits in the west and south-west—with the exception of some parts of the southern shore of Lake Erie, near the lake. A few late apples, (Rawle's Janet,) may be spared to us.

The grapes have fared better, not more than *half* the shoots being destroyed. Latent buds will push out new shoots of course, but whether

productive, (or fruit bearing,) I am unable to say. I expect, however, a pretty fair crop—*rot excepted.*

This frost has proved conclusively, that of all *important* fruits, the grape is least subject to injury from that cause.

This frost is the most destructive we have had since the 26th of April, 1834, (which was also *locust* year,) and very similar in its effects; the vegetation was then a little more forward than now.

On the morning of the 2d instant the average range of the thermometer in this vicinity, at 5 o'clock, was about 24½. Very repectfully, R. Buchanan.

N. B. We find here, that a glass or two of the still Catawba at dinner, prevents acidity on the stomach—and that two or three at the same meal, is very useful to those afflicted with dyspepsia. The pure article is often prescribed by our physicians. R. B. *Cincinnati, May* 9, 1851.

We are greatly indebted to Mr. Buchanan for his very acceptable present of these wines. In flavor, the Ohio wines very closely resemble those of the Rhine, and the Catawba grape gives a peculiar fruity flavor which is fast gaining the approbation of good judges. About Cincinnati, the shores of the Ohio are thickly dotted with vineyards, and there can be little doubt that the calcareous soil and warm climate of that region will soon give us American wines that will rank with any of the same class produced in the world.

Very few Americans, except those who have traveled abroad, estimate properly the moral value of pure light wines—because *pure* wines very rarely find their way across the Atlantic.

Containing, as hocks and clarets do, only about eight or nine per cent of alcohol, they are far more wholesome than coffee; and the cheap production of such wines* will do more to decrease the consumption of ardent spirits, than any other circumstance. Neither law nor morals can be brought to bear on the present age so as to *force* men to be entirely temperate—but the introduction of wholesome, pure light wines, at a cheap rate will—as there is abundant proof in the wine districts of Europe. It is for this reason, as well as because we look upon it as a source of national wealth, that we regard the successful labors of such men as Mr. Longworth and Mr. Buchanan, in introducing and perfecting the wine culture, as worthy of the highest public gratitude.

* We understand that the light Catawba wine of the ordinary grade, may be had for about 30 cents a bottle in Cincinnati.

Peaches and Nectarines one species.—Enclosed I send you an account of a curious union of the Peach and Nectarine, which was found on a farm but a few miles distant from this place, last summer. I did not have the pleasure of seeing it myself (being out of the way at the time,) but as a very singular specimen, it was forwarded to one of our most distinguished botanists in Charleston, by whom the accompanying description was furnished to one of the city papers. As the account will prove interesting to pomologists generally, I have thought it worthy of a more permanent record, especially as it would be seen by comparatively only a few, in the paper in which it appeared. I would have furnished you with a copy at the time, but that you were travelling in Europe, and when remembered after your return, I could not find the one I kept for some time. I send you all that was published and you can insert the whole or only such parts as you may think proper. I shall endeavor to ascertain whether any such are produced this summer, and should there be, will try and forward a specimen to you. I remain, yours, &c. J. D. Legare. *Aiken, S. C., March* 31, 1851.

We yesterday received from Aiken, for which we are indebted to the kindness of Mr. Dawson, a specimen of fruit of so singular a character and presenting a peculiarity which occurs at such rare and uncertain intervals, that we request a small space in your paper for a brief description.

We cannot characterise this fruit more accurately than as half a peach and half a nectarine, united by a seam running around and through the fruit, by which it is divided into nearly equal parts. The fruit was of moderate size, and was taken from a peach tree—it having been the only one that presented this peculiarity. All the rest were genuine peaches. It was what is usually called a cling-stone, viz: the pulp adhering to the stone. On one side of this fruit was, in all its peculiarities, a nectarine. It had a smooth skin of a rich dark red color, possessing the fragrance of that fruit, and it was ascertained on being tasted by several good judges, that it had all the flavor of the nectarine. The other half was in all its particulars a peach, with its down, fragrance and flavor.

The seam which separated the two halves of the fruit was very distinct—on one side the nectarine protruded, whilst on the opposite edge the peach swelled out and the nectarine receded, presenting the appearance of half a peach and half a nectarine, not regularly placed together, but slipped a little to one side, and then united by a subsequent growth. The stone was on the peach side deeply furrowed and corrugated, as is the case in the peach stone, and on the other less indented and more smooth, as in the nectarine. We had some expectation of finding a double kernel, but in this we were disappointed. It is a single kernel, well filled, and which we have planted, although, even should it produce a tree, we have little expectation of its bearing similar fruit.

An interesting inquiry still remains for the consideration of botanists. By what process in nature has this fruit been produced? We were infromed by our friend President FINLEY, who sent us a communication which accompanied the fruit, "that it grew on a tree of Mr. ZEAGLER's about ten or twelve miles from Aiken, and that there were no nectarine trees on the farm."

It has now been fully established by botanists, that the peach and nectarine are mere varieties of one species, (*Amygdalus persica.*) These varieties are only preserved with their separate peculiarities by budding, grafting on the roots, and other artificial modes. Bees and other winged insects, are known to carry the pollen of fertilizing dust to great distances, which is communicated to the pistil. Hence, in our apples, pears, peaches, plums, corn, &c., we cannot calculate with certainty on a product similar to the original fruit. We cannot account for the peculiarity in this nectarine-peach on any other principle than that of a double fertilization of the pistil by a bee or other insect, and that whilst the pollen of the peach communicates its peculiar properties to one side of the fruit, that of the nectarine was conveyed to the other. The occurrences, however, are as rare as that of a somewhat analogous phenomenon in the human subject. We recollect having read in the Horticultural Transactions, vol. 1st., of a single fruit having been produced with the coat of the peach on one side, and that of the nectarine on the other, but have no opportunity of referring more particularly to that work. It was also, we think, stated that in one instance a tree was produced which on one side had the downy coat of the peach, and on the other the smooth bark of the nectarine. This is repeated in a recent English work—Description of Vegetable Substances, Fruits, &c., 297. B.

NEW ZEALAND SPINACH.—A correspondent who is a good judge of *greens*, complains that we have never recommended one of the most valuable of all the tribe—especially for summer use—the New Zealand Spinach, and sends us the following note of this plant—the seeds of which may be had at THORBURN's or any other of the large seed stores. ED.

New Zealand Spinach, (Tetragonia expansa,) so called, because it was found growing wild on the shores of New Zealand when Captain Cook first touched at that island. Although the natives made no use of this plant as an esculent, the naturalists who accompanied the expedition were induced to recommend it as a vegetable which might be safely eaten, since its appearance and general characteristics were so similar to the Chenopodium. On trial, it was found to be both agreeable and wholesome. Sir Joseph Banks brought it into culture in England in 1772, and it has subsequently been found to be a much more hardy and valuable plant than was at first supposed. It was at first treated as a green-house plant; but now grows freely in the open garden, and indeed seems already to have naturalized itself in the south-west of England. A writer, from Exmouth, observes, in the "Gardener's Magazine" for February 1829, "The New Zealand Spinach is quite a weed with us, as, wherever it has once grown, plants rise spontaneously, even when the seeds have been wheeled out with the dung in the the winter, and again brought in as manure in the spring. I have now a full supply of it in my old pink bed." This Spinach has an advantage over the common sort under cultivation, in producing an abundance of large and succulent leaves during the hot weather, when the latter plant runs almost immediately to seed, and produces little or nothing. It is likewise milder in flavor, and of so rapid growth, that a bed with about 20 plants is sufficient for the daily supply of a large family. Though by some called a biennial, this Spinach is an annual in our climate. The stem has numerous thick and strong branches, somewhat procumbent for the greater part of their length, but raised at the points. The leaves are fleshy and succulent, three or four inches long, of a dark green on the under part, but of a paler color on the surface, on which the midribs and nerves are strongly marked. They are triangular, or rather of an elongated heart-shape, having the angles at the base rounded, and the apex sharp and extended. The flowers are small, and of a yellowish green color; they appear in August and September. The whole plant is thickly studded with minute aqueous tubercles; a peculiarity likewise to be found in some species of atriplex and chenopodium. In six weeks after sowing, some of the leaves of the plants are fit for gathering. These are pinched off, and not torn from the branches. This plant has been likewise found growing on the Tonga islands; and Thumberg discovered it of spontaneous growth in Japan. New Zealand Spinach is remarkable as being almost the only native of the isles of Australasia which has been found worthy of a place in the kitchen-gardens of Europe.—*Rhind's Vegetable Kingdom.*

BRIDGMAN says, "its nature seems to be

opposite to the common Spinach, as it will endure the heat better than the cold. It may be obtained in the summer by planting the seed in April or May—(*he might have added June.*) Being of luxuriant growth, it should be planted in hills three feet apart and about two seeds in a hill. The leaves will be fit for use during the summer and until late in the autumn." Yours, E. *New-York, May*, 1851.

Prof. Harris on the Curculio.—This able entomologist has sent the following letter to the Boston Cultivator, as a guide to cultivators. As the recommendation of one who has studied the habits of this insect very thoroughly, it is worthy of attention.

Mr. Editor:—These depredators have begun their summer work in good earnest. On the 27th, I saw cherries not bigger than small peas, and plums still smaller, that had been stung; and the next day, shaking brought down the weevil from a plum tree. From the appearance of the fruit, the weevils must have been busy a week or more ago. Those persons who wish to save their plums and cherries, should immediately begin to use such means as may prove best for protecting the fruit.

Showering the trees with lime-water, or throwing the fluid upon them with a syringe, till it forms a white coat on the young fruit, is said to be an effectual preservative from the attacks of the plum-weevil. It may be asked, however, whether we shall not have to shower our cherry trees and our apple trees, also. It is a well established fact, that the plum-weevil attacks all the following fruits, namely: plums, cherries, apples, nectarines, apricots, and peaches and even walnuts. The whitewash may protect the plums, but the other fruits will be only the more sure to suffer, unless protected in like manner; and, when it comes to showering big trees and whole orchards in order to save the fruit, we shall begin to make unfavorable estimates of the cost and of the time required.

Sprinkling salt upon the surface of the ground has been repeatedly recommended, and some cultivators have applied it abundantly to the soil around plum trees; but it seems with very doubtful results. Some of us have lately had an opportunity of testing the efficacy of sea salt on a large scale, where our gardens (as was the case with mine) have been thrice overflown by the sea, during the high tides of last April. We shall soon find out whether the brine will have any effect upon the weevils, or will do our trees good in any other way. It is not yet time to make up an opinion thereon.

Of other remedies I can speak with much confidence—of those whose object is to *kill the* insects outright, in whatever form they may be found. We may begin the slaughter by taking the insects during the season when they employed in laying their eggs, or stinging the fruit, as this process is commonly called. Let a large sheet, divided half way through the middle, be spread under the the trees, every morning early, and every evening after sunset; then, if the tree be suddenly jarred by a few smart blows, the weevils will drop upon the sheet as if *dead*, looking in their motionless state, like little blackish buds. Gather them up immediately, and throw them into a tin pail having a little water therein, and when the gathering is finished, put them into the fire. Most of the insects thus caught napping, will be found to be females; and, as each female lays a large number of eggs, it is apparent that in this way, we shall nip the future brood in the bud. Plum trees, peach trees, and cherry trees, when not too large, and small apple trees, may thus be protected to some extent. But, as the weevils fly well, especially in the middle of the day, we may expect to be visited by some from the gardens and orchards of our neighbors, and even from others distant half a mile or more. The remedy, to be effectual therefore, requires to be universally adopted.

Let swine be suffered to go at large and to root in the old orchards, and they will do their part in killing and eating the weevils while in a chrysalis state in the ground. Gather up all wind-fallen, immature and wormy fruit, daily, or twice a day, put it into barrels or tubs, and pour boiling water over it. Let this be done faithfully by every owner of a fruit tree, and my word for it, there will soon be a sensible diminution of the number of the insects; and a much greater amount of sound fruit will be produced. This simple remedy can be employed by almost every one, at a comparatively trifling expense. It is because it has been so much neglected, that we now have so much wormy fruit; and the evil is evidently very much on the increase.

There are, in fine, but two resources that come within our power; either to make a general business of *killing* destructive insects in their season, by direct attacks upon them in their various forms; or, to *starve* them to death, by cutting down all our fruit trees. T. W. Harris. *Cambridge, Mass., May* 30, 1851.

Answers to Correspondents.

Perpetuals.—*Rosa*, (Saratoga, N. Y.) You complain of the non-blooming of your perpetual Roses. It is doubtless owing to the want of food. You should take up the bed this autumn, dig out the whole of the soil and subsoil (i.e. the second foot of soil) and fill up its place with stable manure mixed with one-half loam. Then replant the roses and they will bloom plentifully all next summer—especially if you keep the bed rather low, so as to catch and hold the summer showers. All that you

can do this season is to cut back three or four inches, the ends of the shoots that have flowered, fork up the bed and drench it liberally with liquid manure once or twice. This will start the plants into new growth and with that comes more flowers of course.

Rare Trees.—*W. Wilson*, (New-York.) The Virgilia is a native of Kentucky, and is perfectly hardy in any part of the northern states. It is one of the handsomest of all ornamental trees—whether we consider its fine foliage or its lovely white blossoms. It is scarcer in the nurseries than it should be—considering the fact that there are several trees in the gardens about Philadelphia that bear seeds abundantly. *J. M.*, (Buffalo.) The evergreen alluded to is the Himmalayan spruce (*Abies Smithiana*) perfectly hardy and unsurpassed among spruces—being much more beautiful than the Norway spruce, in the same way. *Pinus excelsa* proves as hardy as the common white pine. The European Judas tree (*Cercis siliguastrum*) has larger and finer flowers than our native species. Plants may be had of Saul & Co., Newburgh.

Sickly Orange Trees.—*A. P. J.*, (Baltimore.) Bad soil is undoubtedly the cause of the sickly state of your yellow leaved orange and lemon trees. Take them out of the tubs and shake off a good part of the soil from the roots. Repot them in a mixture of one-half good rich loam—the top spit of a rich turfy pasture—one-third decomposed cow manure and one-third fine charcoal with a little sand. Shorten in the branches all over the head, place the tubs in a shaded situation (on the north side of a building)—and water them plentifully as often as they appear dry.

Espalier Fruit Trees.—*N.*, (Boston.) Your gardener has injured your trees by excessive pruning. Being a Scotchman he was taught training and pruning in a damp climate with a covered sky, and pursues the same system here where we have a dry climate and an unclouded sky. If he will take a hint from nature on this side of the water and leave more wood and leaves, his trees will regain their health. A south exposure we consider on the whole the worst for trained fruit trees.

Cockroaches.—*A Kitchen Gardner*, (Jersey City.) The following is given as an excellent mode of destroying these creatures. "Miz 1 oz. of arsenic with 4 oz. of tallow, and melt them together. When thoroughly incorporated by stirring and partially cooled, small pieces of wood should be dipped in the mixture which will form a coating over the wood. If these pieces of wood are placed in the kitchen where the cockroaches are, they will eat them greedily and perish."

Red Spider.—*A Novice.* The sickly yellow appearance of the foliage of the grapes in your vinery is caused by that pest the red spider. The only remedy for it now, is to dust the under side of the leaves with flower of sulphur. But you should have prevented it by keeping the air of the vinery moist during the hot weather, by frequent syringings and sprinkling the floor with water.

Names of Plants.—*J. G. S.*, (Rose Hill, Va.) The Clematis with a large pale blue flower from the Blue Ridge mountains, of which you enclose a specimen in bloom, is the American Atragene (*Atragene Americana*) one of the Clematis tribe—and one of our prettiest native climbing shrubs. The buck-eye of the western states is a species of horse-chestnut.

To Destroy Ants.—Will you please to inform me through your valuable journal of some method for destroying ants. After repeated doses of whale oil, soap, tobacco water, lime, ashes, and snuff, they still continue to operate destructively upon Osage Orange hedge plants and other things which are not so strong as to bid them defiance. I am quite discouraged and would be greatly obliged for information. Yours resp., *A Rochester Subscriber. June* 14, 1851.

Tobacco water if made strong enough, and a very *little starch* mixed with it, will destroy them on the young shoots. Ed.

Horticultural Societies.

Pennsylvania Horticultural Society.—The stated meeting for May, was held on the 21st. The saloon was thronged with visitors, who assuredly must have been gratified with the display, which consisted of extensive tables covered with beautiful flowering plants and culinary vegetables, in the greatest profusion. Of the former, Peter Mackenzie exhibited (not for competition) a handsome collection of Calceolarias, Fuchsias, Cinerarias, and a large specimen of Azalea variegata, completely enveloped with its rich and resplendent flowers, an object of great attraction. Robert Buist, an extensive collection of Pelargonia, many of which were of the new fancy varieties, and all of the choicest kinds; new Calceolarias, fine Azaleas, and several plants of recent introduction, and now for the first time brought into notice. The Tetratheca verticillata, a pretty delicate plant, with very narrow leaves in whorls, and fine cerulean flowers; Henfrya scandens bearing clusters of white flowers; Centranthus microsiphon, a very showy seedling mimulus of rich colors, which he names "Jupiter;" Azalea coronata, with other fine plants. Jno. Lambert's gardener exhibited fine specimens of Rhododendron ponticum in full bloom, Camellias, Pelargoniums, Cinerarias, etc. Benj. Galliss and William Hall each presented tables of choice roses. A large basket of the choicest cut flowers was shown by the President's gardener; also ripened grapes of the white Constantia and Chasselas of Fontainbleau varieties. J. M. Page, of Burlington, Strawberries. Two seedling apples of merit from Berks county were seen, and specimens of the Loquat by Mrs. J. R. Latimer of Wilmington. Among the vegetables were observed very fine cucumbers from Geo. W. Carpenter, Germantown, Saml. C. Ford's, Isaac Newton's, Delaware county, and Harry Ingersoll's. Rhubarb of gigantic proportions was brought by Saml. Cooper, Henry Cooper, William Hobson and others. A display of cauliflowers from the Asylum for the Insane, which for beauty and extent has never been surpassed. Superb Asparagus by J. M. Page, Burlington, and large displays by Anthony Felton, Jr., Miss Gratz's gardener, John Lambert's gardener and a few varieties by Wm. Johns.

The usual stated meeting for June, was held on Tuesday June 17th. The exhibition was very good for a summer month, when few green-house plants are in bloom, and but a small variety of fruits matured. The saloon was quite crowded with visitors. Among the objects shown, some of interest only will be noticed. In Robert Buist's collection of plants were *Jasminum teunifolium*, of recent introduction, and shown for the first time; it is a beautiful, delicate species of that favorite genus; two seedling Gloxinias, remarkably fine and much admired—No. 1, bore flowers of a delicate blush with a white throat; No. 2, scarlet, with throat white, edged with crimson. *Magnolia Exmouthii*, a dwarf plant, bearing very large flowers; some dozen specimens of Pelargonia and as many Gloxinias, with Ericæ, formed the collection. From James Dundas' houses were three plants of *Cereus grandiflorus*, each bearing expanded flowers—Gloxinias, Lilies and Fuchsias. Thomas Meehan, gardener to A. M. Eastwick, (Bartram's garden,) sent fine seedling Calceolarias, handsome Fuchsias, and other plants, with three specimens of Chrysanthemums in flower, which he by management has bloomed in the summer season; the mode of culture by which he effected this result, he reported to the society in an interesting communication.

On the fruit tables, were six pots of grape vines in full bearing, grown from single eyes, one year old, from C. Cope's (President) houses, of the Black Hamburg, Lashmere's seedling, white and grizzly Formtignac, white Constantia and white sweet water varieties, forming a spectacle of much attraction; from same source, was a very large specimen of the La Mercier cherry. Dr. Brinckle exhibited fine specimens of nine varieties of his seedling Raspberries, several of which were of surpassing excellence. Isaac B. Baxter, beautiful specimens of Brinckle's Col. Wilder Raspberry, large Gooseberries, the Guigne noir, June Duke and Portugal cherries. John R. Brinckle presented a fine display of cherries of the following kinds—

Amber, Bigarreau, Gros Cœuret, Black Tartarian, Burr's Seedling, Downton, Napoleon Bigarreau, Reine Hortense, and a seedling. John Perkins several varieties of cherries—fine Amber, Black Eagle and other kinds of cherries; and Hovey's seedling strawberries were seen. Four tables well spread with fine vegetatables were shown. THOS. P. JAMES, Rec. Sec.

HARTFORD CO. HORTICULTURAL SOCIETY.—At the annual meeting of the Hartford County Horticultural Society, the following officers were chosen for the year ensuing, and it was voted that a list of the same be forwarded for publication in the Horticulturist:

President—ALFRED SMITH.

Vice Presidents—Wm. W. Turner, Henry Mygatt.

Rec. Secretary—Gurdon W. Russell.

Cor. Secretary—John J. Butler.

Treasurer—Erastus Smith.

Auditor—T. H. Holcomb.

Standing Committee—Wm. W. Turner, Dr. H. A. Grant, P. D. Stillman, Joseph Winship, George Beach, jr., Dr. T. S. Comstock, Dr. Gurdon W. Russell, John H. Goodwin, H. W. Terry, E. A. Whiting, Chas. P. Wells, H. L. Bidwell, Charles L. Porter and Henry Affleck. Yours, &c., GURDON W. RUSSEL, Rec. Sec'y. *Hartford, June* 24, 1851.

CLEVELAND HORTICULTURAL SOCIETY.—This Society held its first meeting for the season on Wed'y, May 14, 1851. J. Gallup in the chair.

On motion, A. McIntosh—*Resolved*, That we now proceed to the election of officers for the ensuing year.

On counting the ballots, the following gentlemen were declared duly elected:

President—Maj. S. H. WEBB, of Newburg.

Vice Presidents—Dr. J. P. Kirtland, of Rockport; Col. H. H. Coit. of East Cleveland; Wm. D. Beattie, of Cleveland; Jno. Kirkpatrick, of Ohio city.

Cor. and Rec. Secretary—J. F. Hanks.

Treasurer—J. Stair.

Librarian—B. H. Stair.

Committee on Trees and Shrubs.—G. Hoadler, J. Houghton, J. Kirkpatrick.

Comm. on Entomology—Beattie and Hanks.

Committee on Finance and Library—Younglove, Payne and Brown.

Committee on Fertilizers—Case and Cassels.

On motion, Maj. Webb—*Reeolved*, That Mrs. Wm. Smyth, Mrs. J. A. Harris, Mrs. C. D. Brayton. Miss Jane Blair and Mrs. John Shelley are hereby constituted a Floral Committee for the ensuing year, whose duty it shall be to notice new, rare and extra grown specimens of flowers, and prepare a report of the same, to be published with the proceedings of the annual exhibition.

On motion, J. Houghton—*Resolved*, That J. Hoadley, J. Gallup, J. Houghton, J. Stair, J. Kirkpatrick, A. McIntosh and W. W. Custead be a committee to prepare a list of premiums, to be awarded at the annual exhibition, to report at our next meeting on the 7th of June.

On motion, J. Stair—*Resolved*, That, in common with our fellow-citizens generally, we deplore the sudden and unexpected decease of our late worthy President, C. D. Brayton, M. D., who, for many years, was an active and very efficient member of this Society; promoting largely its interests and prosperity by his presence, counsels and contributions.

Resolved, That Messrs. Webb and Hanks be a committee to present the heartfelt condolence and sympathy of this Society to Mrs. Brayton and her afflicted family.

On motion, G. Hoadley—*Resolved*, That Messrs. J. Stair, Webb and Hanks be authorized, should it become necessary before our next meeting, to dispose of the Horticultural Rooms, according to their best judgment.

J. F. HANKS, Sec'y.

CHESTER CO. (PA.) HORT. SOCIETY.—The June exhibition of this Society was held at their Hall in Westchester, last week. The efficient officers and managers of the institution had spared no pains to fit up the building in the most tasteful and convenient manner for the accommodation of the lovers of Flora, mechanics, artists and manufacturers—as well as for the accommodation of visitors.

Some account of the numerous articles which were presented, with most of the premiums, will be found in the Record to day, under our Horticultural Department. It is necessarily imperfect, as indeed no pen could do justice to the many beautiful specimens of natural objects, arranged and prepared by the hand of beauty and taste. There were magnificent specimens of green-house plants—and numerous designs of flowers, shrubs, grasses and vegetables. The atmosphere was fragrant with the perfume of the flowers, and at the same time vocal with the songs of birds and the noise of the fountain. There were some beautiful specimens of moss work, and also grottoes of shell which could only be fully admired by being carefully studied out and examined. The needle work adorned various parts of the Hall, exhibiting many rich designs wrought out with a taste and judgment that could be looked for only in the cultivated minds of the gentler sex. The walls of the building were adorned with a number of exquisite paintings in water colors and *pastil*, reflecting great credit upon the artists. In the department of wax flowers and vegetables, and artificial paper flowers, there was a brilliant variety. In the department of fruits and vegetables—of cherries, apples, strawberries, beets, cabbages, potatoes, &c. &c., there were numerous specimens, creditably sustaining this department of the exhibition. But we did not design to go into detail; we refer to our Horticultural Department for additional particulars. —*Village Record.*

Mount Fordham—the Country Seat of Lewis G. Morris, Esq.—(See p. 372.)

THE

Horticulturist,

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

The New-York Park.

THE leading topic of town gossip and newspaper paragraphs just now, in New-York, is the new park proposed by MAYOR KINGSLAND. Deluded New-York has, until lately, contented itself with the little door-yards of space—mere grass plats of verdure, which form the squares of the city, in the mistaken idea that they are parks. The fourth city in the world, (with a growth that will soon make it the second,) the commercial metropolis of a continent spacious enough to border both oceans, has not hitherto been able to afford sufficient land to give its citizens, (the majority of whom live there the whole year round,) any breathing space for pure air, any recreation ground for healthful exercise, any pleasant roads for riding or driving, or any enjoyment of that lovely and refreshing natural beauty from which they have, in leaving the country, reluctantly expatriated themselves for so many years—perhaps for ever. Some few thousands, more fortunate than the rest, are able to escape for a couple of months, into the country, to find repose for body and soul, in its leafy groves and pleasant pastures, or to inhale new life on the refreshing sea-shore. But in the mean time the city is always full. Its steady population of 500,000 souls, is always there; always on the increase. Every ship brings a live cargo from over-peopled Europe, to fill up its crowded lodging-houses; every steamer brings hundreds of strangers to fill its thronged thoroughfares. Crowded hotels, crowded streets, hot summers, business pursued till it becomes a game of excitement, pleasure followed till its votaries are exhausted, where is the quiet reverse side of this picture of town life, intensified almost to distraction?

MAYOR KINGSLAND spreads it out to the vision of the dwellers in this arid desert of business and dissipation—a green oasis for the refreshment of the city's soul and body. He tells the citizens of that feverish metropolis, as every intelligent man will tell them who knows the cities of the old world, that New-York, and American cities generally, are voluntarily and ignorantly living in a state of complete forgetfulnes of

nature, and her innocent recreations. That because it is needful in civilized life for men to live in cities,—yes, and unfortunately too, for children to be born and educated without a daily sight of the blessed horizon,—it is not, therefore, needful for them to be so miserly as to live utterly divorced from all pleasant and healthful intercourse with gardens and green fields. He informs them that cool umbrageous groves have not forsworn themselves within town limits, and that half a million of people have a *right* to ask for the "greatest happiness" of parks and pleasure grounds, as well as for paving stones and gas lights.

Now that public opinion has fairly settled that a park is necessary, the parsimonious declare that the plot of 160 acres proposed by MAYOR KINGSLAND is extravagantly large. Short sighted economists! If the future growth of the city were confined to the boundaries their narrow vision would fix, it would soon cease to be the commercial emporium of the country. If they were the purveyors of the young giant, he would soon present the sorry spectacle of a robust youth magnificently developed, but whose extremities had outgrown every garment that they had provided to cover his nakedness.

These timid tax-payers, and men nervous in their private pockets of the municipal expenditures, should take a lesson from some of their number to whose admirable foresight we owe the unity of materials displayed in the New-York City-Hall. Every one familiar with New-York, has wondered or smiled at the apparent perversity of taste which gave us a building—in the most conspicuous part of the city, and devoted to the highest municipal uses, three sides of which are pure white marble, and the fourth, of coarse, brown stone. But few of those who see that incongruity, know that it was dictated by the narrow sighted frugality of the common council who were its building committee, and who determined that it would be useless to waste marble on the rear of the City-Hall, "*since that side would only be seen by persons living in the suburbs!*"

Thanking MAYOR KINGSLAND most heartily for his proposed new park, the only objection we make to it is that it is *too small*. One hundred and sixty acres of park for a city that will soon contain three-quarters of a million of people? It is only a child's play-ground. Why London has over six thousand acres either within its own limits, or in the accessible suburbs, open to the enjoyment of its population—and six thousand acres composed too, either of the grandest and most lovely park scenery, like Kensington and Richmond, or of luxuriant gardens, filled with rare plants, hot-houses and hardy shrubs and trees, like the National Garden at Kew. Paris has its Garden of the Tuilleries, whose alleys are lined with orange trees two hundred years old, whose parterres are gay with the brightest flowers, whose cool groves of horse-chestnuts, stretching out to the Elysian Fields, are in the very midst of the city. Yes, and on its out-skirts are Versailles, (three thousand acres of imperial groves and gardens there also,) and Fontainbleau, and St. Cloud, with all the rural, scenic, and palatial beauty that the opulence of the most profuse of French monarchs could create, all open to the *people* of Paris. Vienna has its great *Prater*, to make which, would swallow up most of the "unimproved" part of New-York city. Munich has a superb pleasure-

ground of five hundred acres, which makes the Arcadia of her citizens. Even the smaller towns are provided with public grounds to an extent that would beggar the imagination of our short-sighted economists who would deny "a greenery" to New-York; Frankfort, for example, is skirted by the most beautiful gardens, formed upon the platform which made the old ramparts of the city—gardens filled with the loveliest plants and shrubs, tastefully grouped along walks over *two miles* in extent.

Looking at the present government of the city as about to provide, in the Peoples' Park, a breathing zone, and healthful place for exercise for a city of half a million of souls, we trust they will not be content with the limited number of acres already proposed. *Five hundred acres* is the smallest area that should be reserved for the future wants of such a city, *now*, while it may be obtained. Five hundred acres may be selected between 39th-street and the Harlem river, including a varied surface of land, a good deal of which is yet waste area, so that the whole may be purchased at something like a million of dollars. In that area there would be space enough to have broad reaches of park and pleasure-grounds, with a real feeling of the breadth and beauty of green fields, the perfume and freshness of nature. In its midst would be located the great distributing reservoirs of the Croton aqueduct, formed into lovely lakes of limpid water, covering many acres, and heightening the charm of the sylvan accessories by the finest natural contrast. In such a park, the citizens who would take excursions in carriages, or on horseback, could have the substantial delights of country roads and country scenery, and forget for a time the rattle of the pavements and the glare of brick walls. Pedestrians would find quiet and secluded walks when they wished to be solitary, and broad alleys filled with thousands of happy faces, when they would be gay. The thoughtful denizen of the town would go out there in the morning to hold converse with the whispering trees, and the wearied tradesmen in the evening, to enjoy an hour of happiness by mingling in the open space with "all the world."

The many beauties and utilities which would gradually grow out of a great park like this, in a great city like New-York, suggest themselves immediately and forcibly. Where would be found so fitting a position for noble works of art, the statues, monuments, and buildings commemorative at once of the great men of the nation, of the history of the age and country, and the genius of our highest artists? In the broad area of such a verdant zone would gradually grow up, as the wealth of the city increases, winter gardens of glass, like the great Crystal Palace, where the whole people could luxuriate in groves of the palms and spice trees of the tropics, at the same moment that sleighing parties glided swiftly and noiselessly over the snow covered surface of the country-like avenues of the wintry park without. Zoological Gardens, like those of London and Paris, would gradually be formed, by private subscription or public funds, where thousands of old and young would find daily pleasure in studying natural history, illustrated by all the wildest and strangest animals of the globe, almost as much at home in their paddocks and jungles, as if in their native forests; and Horticultural and Industrial Societies would hold their annual shows there, and great expositions of the arts would take place in spacious buildings within the

park, far more fittingly than in the noise and din of the crowded streets of the city.

We have said nothing of the *social* influence of such a great park in New-York. But this is really the most interesting phase of the whole matter. It is a fact not a little remarkable, that ultra democratic as are the political tendencies of America, its most intelligent social tendencies are almost wholly in a contrary direction. And among the topics discussed by the advocates and opponents of the New Park, none seem so poorly understood as the social aspect of the thing. It is, indeed, both curious and amusing to see the stand taken on the one hand, by the million, that the park is made for the "upper ten," who ride in fine carriages, and on the other hand, by the wealthy and refined, that a park in this country will be "usurped by rowdies and low people." Shame upon our republican compatriots who so little understand the elevating influences of the beautiful in nature and art, when enjoyed in common by thousands and hundreds of thousands of all classes, without distinction! They can never have seen, how all over France and Germany, the whole population of the cities pass their afternoons and evenings together, in the beautiful public parks and gardens. How they enjoy together the same music, breathe the same atmosphere of art, enjoy the same scenery, and grow into social freedom by the very influences of easy intercourse, space and beauty, that surround them. In Germany, especially, they have never seen how the highest and the lowest partake alike of the common enjoyment—the prince seated beneath the trees on a rush bottomed chair, before a little wooden table, supping his coffee or his ice, with the same freedom from state and pretension as the simplest subject. Drawing-room conventionalities are too narrow for a mile or two of spacious garden landscape, and one can be happy with ten thousand in the social freedom of a community of genial influences, without the unutterable pang of not having been *introduced* to the company present.

These social doubters who thus intrench themselves in the sole citadel of *exclusiveness*, in republican America, mistake our people and their destiny. If we would but have listened to them, our magnificent river and lake steamers, those real palaces of the million, would have had no velvet couches, no splendid mirrors, no luxurious carpets. Such costly and rare appliances of civilization, they would have told us, could only be rightly used by the privileged families of wealth, and would be trampled upon and utterly ruined by the democracy of the country, who travel 100 miles for half a dollar. And yet these, our floating palaces and our monster hotels, with their purple and fine linen, are they not respected by the majority who use them, as truly as other palaces by their rightful sovereigns? Alas, for the faithlessness of the few, who possess, regarding the capacity for culture of the many, who are wanting. Even upon the lower platform of liberty and education that the masses stand in Europe, we see the elevating influences of a wide popular enjoyment of galleries of art, public libraries, parks and gardens, which have raised the people in *social* civilization and social culture to a far higher level than we have yet attained in republican America. And yet this broad ground of popular refinement *must* be taken in republican America, for it belongs of right more truly here, than elsewhere. It is republican in its very idea and tendency. It takes up popular education

where the common school and ballot-box leave it, and raises up the working-man to the same level of enjoyment with the man of leisure and accomplishment. The higher social and artistic elements of every man's nature lie dormant within him, and every laborer is a possible gentleman, not by the possession of money or fine clothes—but through the refining influence of intellectual and moral culture. Open wide, therefore, the doors of your libraries and picture galleries, all ye true republicans! Build halls where knowledge shall be freely diffused among men, and not shut up within the narrow walls of narrower institutions. Plant spacious parks in your cities, and unloose their gates as wide as the gates of morning to the whole people. As there are no dark places at noon day, so education and culture—the true sunshine of the soul—will banish the plague-spots of democracy; and the dread of the ignorant exclusive who has no faith in the refinement of a republic, will stand abashed in the next century, before a whole people whose system of voluntary education embraces (combined with perfect individual freedom) not only common schools of rudimentary knowledge, but common enjoyments for all classes, in the higher realms of art, letters, science, social recreations and enjoyments. Were our legislators but wise enough to understand, to-day, the destinies of the New World, the gentility of Sir PHILIP SIDNEY, made universal, would be not half so much a miracle fifty years hence in America, as the idea of a whole nation of laboring-men reading and writing, was, in his day, in England.

THE BUTTONWOOD TREE DISEASE.

BY A. BAYLIES, TAUNTON, MASS.

DEAR SIR—"A Constant Reader" in the July No., inquires for a little light on the subject of the Buttonwood disease. He shall have that light, although he may consider it by far, smaller than a rush-light.

I have long been acquainted with the Buttonwood, and it was with me a favorite tree. I never saw a diseased one in Massachusetts, before May 21st, 1842, and I never have seen a healthy one in Massachusetts since that time. Now for a solution of this mystery, if mystery it may be called. May 20th, 1842, we had a very cold, rainy day, with much sleet, with the wind at north-east and north, which lasted nearly all day, and at sunset the wind hauled round to the north-west, with a clear sky, and at 9 o'clock in the evening it was very cold, with the numerous stars shining and twinkling as we often see them in December. This state of the weather lasted through the night, and the morning presented appearances which I shall never forget—the earth was frozen hard enough to bear up a man, and the ice was as thick as window glass, and sad to relate, but the truth must come out, every leaf and Buttonwood bud through the length and breadth of Massachusetts was "as dead as a herring." Now what could the poor Buttonwood tree do in this dilemma? Its leaves and its buds were all gone, but it had life and sap enough to form another crop as large as the first, but how to begin this process was the question. Nature is never idle, and perhaps she was not altogether prepared for this contingency, and so I should infer from her tardiness in repairing the injury of the 21st of May.

But finally, about the first of July following, young shoots and leaves began to appear

—so that the friends of this doomed tree began to hope that all was not lost—and that we should finally see the Buttonwood restored. But that hope is likely to prove fallacious—for new wood, that has only about sixty days to mature in, can hardly get strength and vigor to stand our winters. And consequently, the spring of every succeeding year since that eventful time, finds the Buttonwood without a living bud to start from.

A friend of mine, who is quite a traveler, informed me the other day that the only Buttonwood trees that he had seen, that had not suffered as ours have, were some near the falls of Niagara, and they were in all their glory—having been protected by that eternal spray that always fills the air in their immediate vicinity. Yours respectfully.

ALFRED BAYLIES.

Taunton, July 8, 1851.

[Our correspondent's theory would be a good one if its application could be confined to Massachusetts. But three years before the fatal day he records, which began the Buttonwood blight in his state, we saw trees entirely killed by it, as far south as Maryland, where no such frost had taken place. From the south, the disease has gradually spread to the north, and we have watched young trees, that stood last year in perfect luxuriance, by the side of diseased old trees, gradually fall victims to the same malady. Wherever the Buttonwood stands in moist ground, there it seems best able to withstand the disease—while in dry, sandy soils, it is a pretty sure victim to it. The cause, we are confident, lies deeper than any matter of climate—and is worthy of the careful investigation of vegetable physiologists. ED.]

NEW MEXICAN CACTUS.

FROM GARD. MAGAZINE OF BOTANY.

ECHINOCACTUS RHODOPHTHALMUS,—*Hooker*.—Red eyed Echinocactus, (*Bot. Mag. t.* 4486)—Nat. Ord., Cactaceæ § Cactæ.—A green-house succulent plant of sub-columnar form, six inches (or more) high, longitudinally divided into eight or nine deep furrows, with obtuse ridges, formed by transverse lines into lobes or tubercles, each tubercle bearing a cluster of about nine strong, straight, spreading spines, about an inch in length, the central one longest, and standing forward. The flowers—from the top of the plant—are large, handsome, the petals linear-spathulate, rose colored, a dark red stain at the base forming a radiating circle around the staminal column.—From Mexico: San Luis Potosi; introduced about 1847, by F. Stains, Esq. Flowers in summer. Royal Botanic Gardens, Kew.

POMOLOGICAL MEMORANDA.

BY L. F. ALLEN, BLACK ROCK, N. Y.

THE BROWN BEURRE PEAR.—Why it is that this delicious *old* pear is so little noticed of late, when so many new and as yet untried (thoroughly,) varieties are receiving the praises of our pomologists, is to me strange. I have cultivated the Brown Beurre for many years. It needs good culture, I admit; and what don't, if you intend to get its *best* productions?

Its qualities are these: It is a good grower—irregular and twisting, to be sure—but that matters little; it is, in the main, a graceful tree.

It is very hardy, and ripens well its wood.

It is a great bearer, and matures its fruit in October, keeping well into November, and sometimes into December.

Its size is large medium; its flavor is vinous; and grown under the influence of a full sun, most sugary and delicious—indeed I know of nothing more piquant and yet delicate, in the pear family; and with its rich, golden russety hue, the fruit, as a mere show, is a rich ornament to the table.

Grown either on the pear or quince stock, and planted in a rich and dry *stiff* soil—and not much matter how stiff either—one who wants the *very best* October pear can do no better than to cultivate the Brown Beurre as a prominent variety. [We entirely agree with Mr. ALLEN as to the merits of the Brown Beurre. But it has failed of late in all the old soils of the east, and its cultivation has therefore gradually declined. In a new soil, like that of western New-York, its fruit is of the finest quality—and any person who wishes to raise it further east, must restore the potash, lime and phosphate abstracted from the soil by long culture, before he can succeed well again. ED.]

THE NORTHERN SPY APPLE.—In writing about the culture of this excellent fruit, our pomologists say much of its requiring careful pruning and rich cultivation, but without telling the public *why* or how it requires such pruning and cultivation; thus confusing those who do not understand its habits, and creating doubts as to the expediency of growing it all. If those who set about informing the world would go into particulars, it would be better.

The fact is, the Northern Spy is a vigorous and *upright* grower, inclined to throw its wood closely together, like a currant bush. Indeed, the head of a Northern Spy tree, left to itself, looks more like an enormous currant bush than like an ordinary apple tree. But the branches are rather slender, and when in bearing incline to bend over outward with the weight of their fruit. The head must be thinned—and that severely. I have several hundred of them planted in my orchard. Their heads grew compactly together, contrary to my expectations, from what I had heard of them, and last year, for the first time—years after some of my other varieties of apple planted at the same time with them, for the Spy is tardy in arriving at a bearing state—they bore well. I saw the difficulty in the compact growth of the head, and the past spring I went through my trees, and with the saw and knife, gave them a thorough *cleaning out* of the central leading branches, giving an open, *wine-glass* shape to them, and in some cases more like an inverted umbrella. But the process was the *right* one. They are bearing finely; the apples already bending over the branches, and the vigorous young shoots taking a more lateral direction.

In describing fruits, our authors almost all fail in giving *the habits of the tree*, its mode of growth, best manner of pruning each particular variety to induce fruitfullness, &c.,

&c., which, if they would do, would confer a much greater benefit to their readers, than the loose and general remarks which are usually made in their descriptions.

Working the Earth around the roots of Trees.—In the last October number of your paper, I gave a word or two on mulching orchard trees. Those trees stood in a grass meadow which was mowed for hay—of course unploughed, and the mulching was substituted for the ploughing. As the trees, invigorated by the mulching, had made good growth, and fearing that the repetition of that process alone would not answer the purpose the present season—the mulch being removed early last fall, for fear it would harbor the mice about the roots, and thus destroy them, early in May I put to work the plough, with a pair of stout oxen, and a careful driver—the latter more particularly to keep the oxen from goring the trees. Setting the plough, with a good coulter to it, (to *cut* the sod instead of tearing it,) into the ground at six feet back from the tree, and as near within line of it as would lay the furrow against the trunk—say twelve to fifteen inches—I upset the sod six to eight inches deep, and gave four furrows on each side, eight in all, throwing out the plough at six feet beyond the tree—the same distance as it was let in.

The plan worked to my entire satisfaction. I measured young wood on many trees last Saturday, (21st of June,) which had made nine to eighteen inches already, and still growing vigorously, while the grass all over the meadow is large and heavy, thus giving the trees all the advantage of an *entire* ploughing to the field. The sods are not turned *flat;* but perhaps, at an average, two-thirds over, so that the rains and the air can penetrate the open earth, and reach the roots freely. This sod operates as a perfect mulch also—for what is better than a rich, heavy up-turned sod about a tree? The fruit, too, hangs well, and promises large growth.

You may possibly expect me to say a word of my trees planted a year ago, of which I also gave an account in October. Owing to the heavy snows of last winter the mice nibbled many of them, and quite destroyed eight or ten of the 1,200 planted. The land where they stand was all ploughed last fall, at an average of nine inches deep, and in April following sowed into spring wheat, oats and barley, and seeded into grass for meadow. Owing to its being in grain, and in consequence, subject to the depredations of mice while growing and harvesting, I dared not trust the mulching around the trees. Still they are growing remarkably well, many of them already having made a foot of wood up to this time.

Necessity of Thorough Draining for Fruits.—Having a small piece of stiff soil, about half an acre, (clay loam on a clay sub-soil,) near my farm-house, which lay in a *dishing* shape, and of course catching and holding the water flowing on to it from the contiguous grounds, and in a spot where I wanted fruit trees to stand, after thoroughly manuring and ploughing it, I planted it in apple, pear, plum and cherry trees, for house use, and laid it into grass. I didn't look at the condition of the land as I should have done, and paid no attention to draining it; yet I dug well around the trees every year, to promote their growth. Although well planted and tended, the trees did not grow *well*, and the English cherries all but one, several in number, died out, with the single exception of two, and they stood still, barely holding their own. The others made small growth, and bore a little fruit, but even that little in number was small in size. Suspecting the cause, I made two or three small open drains about a foot deep, across the piece, but it was *no go*. The trees refused to progress, and were becoming stunted and mossy.

Last fall I went thoroughly to work and opened ditches two and a half feet deep, three feet wide at the top, and one foot at bottom, thirty to forty feet apart, laying the ground into beds, and leading the water as it fell or stood upon the ground, entirely away. The

trees found it out as quick as I did, and they have now, the very first season after being relieved of that cold stagnant water in the soil, already made more growth than in the three last years before.

Trees of *any* kind—not *water* trees—must have a *dry and warm* soil to grow luxuriantly; and if the soil on which they are wanted to stand be cold, wet and clammy, *thorough* draining will warm it. I have orchard trees now standing, where the year before they were planted was a low swale, but dried by cutting a good ditch through it, and they are the thriftiest trees in the field. One cause no doubt is, that the swale soil is the richest, but before it was drained fruit trees would not grow in it; standing water was upon it for two-thirds of the year, and it yielded nothing but water grass and bushes. An expense of five or ten dollars in ditching has relieved the entire difficulty, and given the best possible soil for a hundred trees to luxuriate, and grow, and rejoice as laughingly as so many frolicking colts in a summer pasture, besides yielding as good crops as any of the adjoining upland. Ditch, *ditch*, DITCH, your cold and clammy soils for tree planting!

WILD OR NATURAL STOCKS FOR FRUIT TREES.—It is probably not for the interest of nurserymen to believe it, but I have no doubt whatever that *natural* stocks, *up as high as the branching point*, are the best for the finer fruits. Let the grafting or budding be done at that point, and I do believe the tree will live twice or thrice as long as if done near to the root. Look at the old orchards, even on poor soil in the old states, that were planted when grafting and budding was little practiced, or scarce known in our country, and see the enormous size and great age of some of the trees. Many of the trees, to be sure, were grafted, but it was done years after they were planted, and in the branches. The huge rings on many of them show that.

Take a common wilding from the nursery or a hedge row, cut it with your saw or knife, and see how much tougher and harder it is than the delicate wood of a *refined* fruit. See the one stand out through all vicissitudes, and grow and flourish, while the other withers, and blights, and cankers under all the care you may give it, unless it be now and then one of the hardiest constitution, which escapes and thrives. The notes of your thorough and capital correspondent, Mr. FRENCH, in the June Horticulturist, p. 257, are a practical commentary on the hardihood of natural stocks in surviving the harsh treatment they receive at the hands of bunglers—and I have seen thousands like it—sufficiently so to lead fruit growers into the trial, at least, of wildings for their standards—*and for pears more especially.*

A fact in point I will mention. Some time since I purchased of a nurseryman a lot of apple trees—in the lump—standing on a certain quarter of his grounds which he wanted to clear away. Many of the best worked trees had been taken out and sold. Of the remainder probably half were worked at the root and the remainder natural stocks, worked originally, but failed and grew up wild and scrubby. As the worked trees were not of the kind I wanted, I took them up indiscriminately, intending to graft them over, with the natural stocks, into kinds that I wished. When they were removed, I found the roots of the wildings to be on an average full twice as stout and numerous as the worked stocks, although the *roots* of these last were wildings. In a few days I cut them *all* off branch high and grafted them. I found the wildings much harder in the wood—for I sawed off and trimmed every one myself—than the others, and when planted, some in the orchard, and others in nursery rows for the purpose of making more growth before planting out, the wild stocks budded out thicker and stonger than the worked stocks, and made a better growth. I should be happy to hear the views of experienced men on this subject.

Black Rock, N. Y., June 24, 1851. LEWIS F. ALLEN.

THE LEAF BLIGHT OF THE PEAR

BY JOHN TOWNLEY, MOUNDVILLE, WIS.

On reading the communication on leaf-blight, by Mr. Hooker, I was reminded of a paper on a similar subject by the late Andrew Knight. On referring to it, I find Mr. Knight's observations so nearly coincide with those recorded by Mr. Hooker, that it is probable the diseases observed by them are identical. The attack of a parasitic fungus (and as will probably hereafter be found of the same species,) seems to have been the immediate cause of disease in both cases. As so little seems to have been written hitherto by horticulturists on this important subject, I send you extracts from Mr. Knight's paper, considering that a statement of the facts observed by him, and of the experiments he made with a view to determine how the disease is communicated from one plant to another, and whether by any expedient it could be prevented or cured, might possibly prove interesting to Mr. Hooker and to the growers of pears generally. I may mention that Mr. Knight's paper was read before the Horticultural Society in 1815, and that the fungus which attacked his pear trees was known to botanists at that time by the name of *Lycoperdon cancellatum.*

"I observed, about seven years ago, a disease upon a few of the leaves of one of the pear trees in my garden at Downton. Bright yellow spots, from which a small quantity of liquid exuded, appeared upon the upper surface of the leaves in June; and subsequently, several conic processes, about one.third of an inch in length, were protruded from the same parts, but from the opposite surface of each leaf; and from these a large quantity of brown impalpable powder, consisting of very minute globular bodies, was discharged in August and September. These minute globular bodies I concluded to be seeds of a species of fungus; but as a few only of the leaves of my trees were affected, and no very injurious effects were visible, I did not take any measures to prevent their dispersion over my garden.

"I did not, however, long remain ignorant of the formidable nature of my new enemy; for within two years, every pear tree in my garden became in some degree diseased. The leaves only, at first, appeared to be injured; but the disease soon extended itself to the annual branches in many protuberant yellow spots, beneath which the bark was found to have acquired a bright yellow color; and as far as this color extended, the bark and the wood beneath it invariably perished, either in the same or following season, leaving wounds similar to those inflicted by canker, but less curable. The fruit also became diseased and worthless, and almost all the young shoots, when once attacked, perished in the following winter. These effects were not confined to my garden, but extended to the pear trees in an orchard which was two hundred yards distant, and I cannot entertain a doubt, but that the disease was communicated to these by seeds which had been conveyed by the prevalent west winds. I endeavored during the summer of 1813 and 1814, to check its progress in my garden, by picking off every diseased leaf; but I found all my efforts nearly abortive, and I have been obliged to destroy the greater part of my pear trees: those which remain have become annually more diseased, and I fear never can be ultimately preserved, unless a remedy for the disease can be discovered."

Mr. Knight tried the effect of sprinkling the leaves with quick-lime and fresh wood ashes, but he had not an opportunity of observing the ultimate effect of these substances, for almost all the leaves fell off prematurely.

"Those of a single small standard pear-tree, on which flour of sulphur had been

sprinkled, remained alive till late in the autumn; and upon these I did not observe the sulphur to operate in any degree, till the period at which the conic processes above mentioned would have appeared; but the yellow spots then became black, and perished, without affording seeds; whence I have reason to hope, that flour of sulphur will prevent, in some measure at least, the rapid extension of this disease.

"As the existence of this species of fungus appeared, three years ago, to be confined to my garden and a few pear trees in its vicinity, and to the hawthorn in an adjoining hedge (for it attacks the hawthorn as well as the pear tree,) I then thought it would be practicable to ascertain decisively the means by which it transfers itself from one tree to another: and this appeared to me to be an important object, because the habits of the *Lycoperdon cancellatum*, and of the fungus which forms the rust or mildew of wheat, are, in many respects, very similar.

"I had so often tried, without success, to transfer the mildew of wheat, and other plants, from a diseased to a healthy subject, in the same season, that I had not any expectation of succeeding in an attempt of that kind; but I thought it not improbable that I might succeed in communicating this disease to seedling plants of the pear tree, having long ago satisfied myself that the species of fungus, which forms the mildew of wheat, always rises from the root of the plant.

"I have many years been in the habit of raising annually pear trees from seeds, with the hope and expectation of obtaining new and hardy varieties; and as the means I employ to obtain seeds well calculated for my purpose, necessarily cost me a good deal of time and labor, I have always planted them in pots, and in the kind of mould which long experience has pointed out to me as the best. This I have always obtained, at the period of sowing the seeds, in January or February, from the banks of a river at some distance from my garden; and in this mould my seedling pear trees always sprang up, and remained during the first season perfectly free from disease. In the spring of 1813, a portion of this mould, which I did not want, was intentionally placed very near some hawthorns and pear trees upon which the Lycoperdon cancellatum abounded, where it remained till the spring of 1814, when it was put into pots, and new seeds deposited in it. These sprang up as usual, and remained in perfect health till the end of May or beginning of June; when the fungus presented itself upon almost all the first true leaves of the plants, which leaves had composed the plumules of the seeds.

"That the fungus in this case rose from the ground, will, I think, scarcely be questioned; but it is necessary to state, that the seeds were all taken from trees which were not quite free from disease, and that I saw in the last spring some diseased plants, in a case where every precaution, except that of using new pots, (which had been my previous custom,) had been taken; and therefore whilst so little is known respecting the habits of plants of this tribe, the preceding facts are not sufficient to support a decision, that the source of the disease might not have been in the seeds themselves. For as the fructification is probably every thing which is seen of this, and many other parasitical fungus plants, the plant may extend in minute filaments through the whole body of the tree which supports it; and it appears in this view of the subject possible, that these slender filaments may extend into the seeds. The following circumstances, however, militate strongly in opposition to this conclusion. A great number of seedling pear trees, which were very much diseased, were removed in the last spring, from my garden to a distant situation, after having had their roots and stems carefully and repeatedly washed and brushed, so as to remove from them every particle of the mould in which they had previously grown; and upon these not a vestige of disease has since appeared. Grafts also, which were

formed of parts of diseased trees, have in all cases produced perfectly healthy foliage, even when inserted into the branches of other diseased trees; which circumstance I think interesting, because it tends to point out a further apparent similarity in the habits of this species of fungus, and that which forms the mildew of wheat, which ceases to vegetate as soon as the straw is severed from its roots, though that remains for some time green and living: whence arises the advantage of cutting mildewed crops of wheat in an immature state. Further experience can, however, alone decide these points: and the only inference I wish to draw from the facts I have stated is, that the Lycoperdon cancellatum is capable under certain circumstances, of being transferred from one plant to another in its vicinity by means of its seeds."

I had intended to have added a few remarks on the conditions required for the growth and increase of parasitic fungi, together with suggestions for an extended and systematic inquiry with a view to determine whether any means are known, or can be devised, to prevent an attack, or diminish the power of these parasites, but as I find they would make this article much too long, I reserve them for a separate communication.

Respectfully yours, JOHN TOWNLEY.

Moundville, Marquette county, Wisconsin.

NOTES ON THE STRAWBERRY.

BY R. G. PARDEE, PALMYRA, N. Y.

SOME distant readers of the Horticulturist have desired me to send to the Editor a sketch of my observations and experience with the strawberry the current season. This I will cheerfully do, if I am permitted to add, that I do not wish them to be considered as conclusive in any case, but rather as only suggestive to others. I am not aware that I have any partialities or prejudices for any particular kinds, and I am quite sure I have never received a dime for strawberries from any one. I cultivate them for my own satisfaction, to which I may add the luxury of giving my family and kind neighbors more acceptable fruit than money will often purchase, and assisting them in determining the best varieties for us to cultivate.

This season has been with us an exceedingly favorable one for the strawberry. The constant succession of plentiful showers has been so grateful to this thirsty plant, that it has returned to us larger and more abundant fruit than usual.

Hovey's Seedling has never borne so satisfactorily on my grounds as during the present season, and the fruit has been so large that we have gathered quarts at a time measuring from four to five inches, and the flavor has been good. While I can say thus much in favor of this standard variety, I am also happy to say that in productiveness and flavor *Burr's New Pine* has decidedly and largely surpassed it, and is only slightly inferior to it in the average size, for we have also gathered quarts of the New Pine measuring from three and three-fourths to four and three-eights inches just below the stem. I allowed my New Pine and a portion of the Hovey's, side by side, to strike their runners and cover the ground, and it is worthy of remark that I was unable to find a *single plant* of the New Pine, even of those runners which struck as late last fall as November, which has not borne liberally this season, and I have carefully examined hundreds with reference to this point; no other variety has as yet done this on my grounds.

The *Lord Spencer* (?) has not this season quite met my expectations, either in respect

to size or productiveness, and yet its flavor as a table berry, when fully ripe, is almost unequalled; but in many respects this season, it has more resembled the Early Scarlet than my other varieties.

The *Black Prince* has borne largely with me, and a large portion of the fruit has been very large, say three and three-fourths to four and a half inches, and is a very showy fruit, but no previous season have we noticed it so deficient in high flavor. The plants which had extraordinary cultivation, and were of such remarkable size, were among those the most deficient in flavor.

The *Alice Maud* has also borne well, and the fruit has been unusually large, but this also has failed to be of high flavor.

Jenny's Seedling has not quite met our expectations this season in productiveness, but the fruit has been very large and good, and may redeem its character with us another season.

The *Roseberry* is of fine flavor, and has borne well, though of medium size. I am quite pleased with Ellwanger & Barry's new seedlings, the *Genesee*, *Monroe*, and *Climax Scarlet*. The plants are very vigorous, and promise a large supply of fine flavored fruit. We shall give them a good chance for another season. Nearly or quite the same may be said of *Richardson's Early*, *Late*, *and Cambridge*, togther with the *Boston Pine*, *Crimson Cone*, *Royal Scarlet*, and perhaps *Swainstone Seedling* and a number of others.

From their good conduct the present season, I shall watch with more than usual interest, the development of some ten or a dozen of Prince's choicest new varieties from Flushing, which I am testing for another season with care, for our soil and climate.

I have had more of the New Pine than any other variety in bearing in my garden, and the greater portion of my plants were transplanted on the 15th of July, 1850, and the ground leveled and mulched immediately, with an inch or so of saw-dust and old tan-bark, since which I have not had occasion to bestow any labor upon them, beyond an occasional watering when very dry, and the pulling of a very few weeds, and the result has been we have gathered between three and four bushels of fine fruit in a succession of more than four weeks daily abundant supply, from a spot of ground fifteen by forty-five feet, and at the full cost of less than *seventy-five* cents per bushel. The New Pine was among the first and last in the season of bearing.

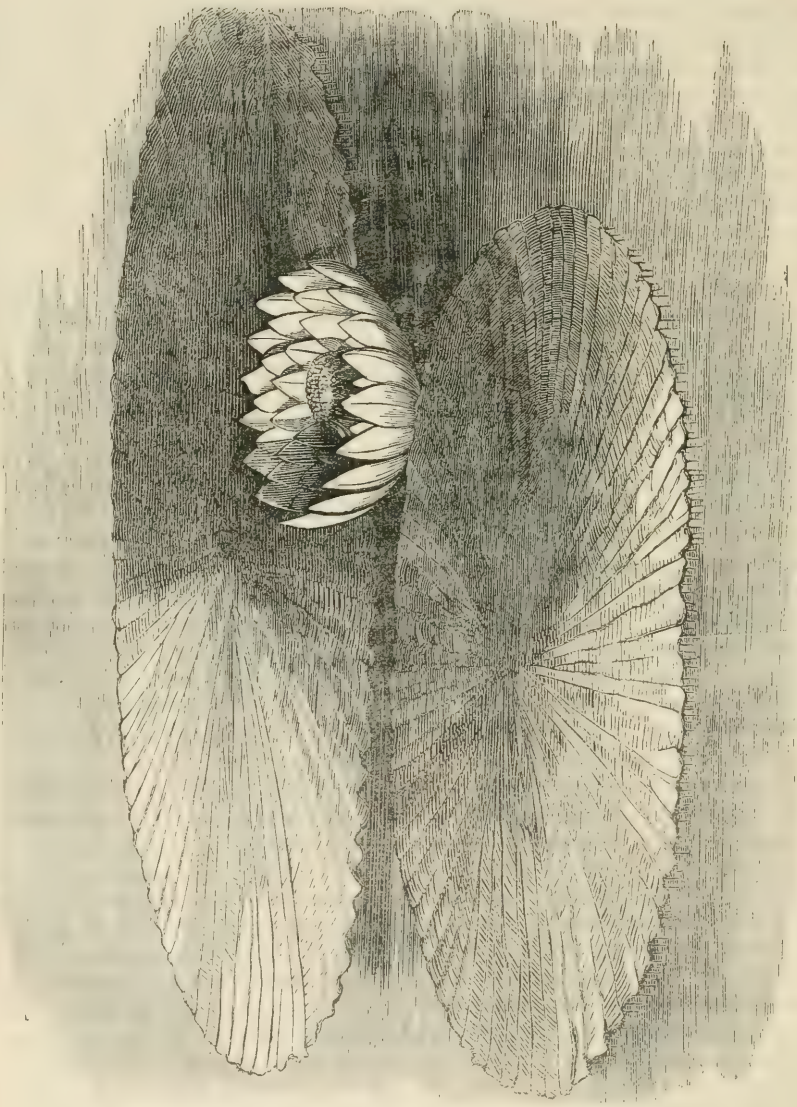
Unless I find other new varieties which I can take pleasure in giving a trial, I do not expect, after next July, to find it desirable to retain more than a selection of some half dozen kinds, out of the thirty-six now in my garden.

A lady from New-Orleans, brought to this place some three or four years ago, two kinds of French strawberries, which I will refer to. One is called the French Cucumber Strawberry, from its long and singular appearance, somewhat resembling the French Hautboy in foliage and appearance, but probably will not be desirable to cultivate only as a curiosity. The other is called the Prince of Orleans—in color and appearance resembling the Roseberry; not larger and not equal to that in flavor, but appears on a short trial to be a very large bearer, but rather tender for a market fruit.

We have also some seedlings of Burr's New Pine, fertilised with our best varieties, coming forward.

The large success of our citizens generally, in raising the strawberry the past season, has greatly increased the cultivation in this vicinity, and the next season we hope to take a more extended view of this fruit than ever before. R. G. P.

Palmyra, July 4, 1851.



VICTORIA REGIA IN OPEN PONDS.

THE VICTORIA REGIA IN OPEN PONDS.

By the following account from the Illustrated News, it will be seen that this magnificent water lily has been grown in an open pond in England. An uniformly high temperature of the water has been secured for it, partly by artificial means, it is true,—but we imagine this would not be needed in the United States—supposing the Victoria to be planted about the middle of June.

We understand Mr. Cope, of Philadelphia, has the Victoria growing in a hot-house which he has lately erected for this noble aquatic, and we hope some amateur will make trial of it now in the open air. Ed.

A successful attempt has been made by Messrs. John Weeks & Co., King's Road Nursery, Chelsea, to grow this magnificent plant in the open air. For this purpose was prepared a pond 21 feet in diameter, and 3½ feet in depth, wherein the lily was planted in loam and river sand, on the 3d of March, when it had three leaves, the largest being 18 inches in diameter. The plant has since increased in size, and has a robust and healthy appearance: the number of leaves on at present is seven, varying from 3½ to 4 feet in diameter; and, as the season increases in warmth, they will attain to a much larger size. The petioles of the leaves are from eight to twelve feet in length, throwing them a considerable distance from the base of the plant.

The first flower partially expanded on the evening of the 16th inst.: for some hours previously it gave out a very rich and powerful fragrance, which could be perceived at a considerable distance. The flower became fully expanded on the following evening, and displayed all its beauties to an admiring company, who had been for a considerable time watching its development. The colors of the lily are white and pink; the outer rows of petals being white, and the inner a rich pink. The entire flower is from nine inches to a foot in diameter: it is of short duration, opening only on two successive evenings; but there is a constant display of flowers throughout the season. The plant has a more noble appearance in the open air, than when growing in the hot-house aquarium—the leaves becoming hypocrateriform, a natural desideratum of much interest.

The pond in which the plant is growing is heated by hot water pipes, of which there are two rows placed at the bottom, communicating with a boiler which heats, besides, a range of houses, the temperature being thereby kept at from 75 to 90 degrees Fahrenheit. There is a constant flow of clear water into the pond, and a waste pipe to carry off the superabundance and keep the surface clear. A margin of blue, yellow and white water-lilies, is placed round the *Victoria Regia*, and tends to show well their lovely and truly regal Sovereign in all her majesty. A temporary covering is placed over the plant at night to protect it from storm and cutting winds.

The *Victoria Regia* has been an object of unceasing interest from the moment of Sir Robert Schomburgk, in 1837, finding this magnificent plant in one of the rivers of British Guiana. In England the *Victoria Regia* first flowered in 1849, and the *spectacle* was engraved in the Illustrated London News for Nov. 17. A leaf and flower of this plant, it will be recollected, was presented to her Majesty and Prince Albert, at Windsor, by Mr. Paxton; and the train of circumstances by which this very plant was mainly contributary to the success of the great exhibition is so interesting as to merit recapitulation. We give it in Mr. Paxton's own words:—"Having in contemplation the erection of the great conservatory at (Chatsworth) in its present form, it was determined, in 1836, to erect a new curvilinear hot-house, 60 feet in length and 26 feet in width, with the elliptical roof

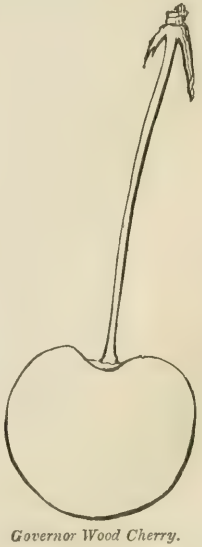
on the ridge and furrow principle, to be constructed entirely of wood, for the purpose of exhibiting how roofs of this kind could be supported. The plan adopted was this—the curved rafters were composed of several boards securely nailed together on templets of wood cut to the exact curve; by this means a strength and firmness was obtained sufficient to support an enormous weight. This house was subsequently fitted up for the *Victoria Regia;* and it was here I invented a waterwheel to give motion to the water in which the plant grew; and here this singularly beautiful aquatic flowered for the first time in this country, on November 9, 1849. You will observe that *nature was the engineer in this case.* If you examine this, and compare it with the drawings and models, you will perceive that nature has provided it with longitudinal and transverse girders and supporters, on the same principle that I, borrowing from it, have adopted in this building."

DESCRIPTION OF TWO NEW CHERRIES FROM OHIO.

BY F. R. ELLIOTT, CLEVELAND O.

A. J. Downing, Esq.—Dear Sir: Some two years since I assumed description of several new varieties of cherries originating from pits of the Yellow Spanish, grown and fruited by Prof. J. P. Kirtland. These having become pretty extensively distributed, I trust have sustained elsewhere, as at home, the report I then made. Here they have fully sustained my words. The "Rockport Bigarreau," and "Kirtland's Mary," taking, however, a first rank, when considered as to point of real merit, market value and public favor. I have now to introduce to your readers, and the pomological world at large, the

Governor Wood Cherry.—This is a variety, the tree of which was grown at same time as "Kirtland's Mary," but afterhaving fruited one season, was by mistake transplanted, and thus retarded in again showing perfect fruit for two years. When first fruited, my notes were made to the effect that it would prove the "most valuable of all." My subsequent notes sustain my first, and I can now safely say, that for size, flavor, and containing a large amount of saccharine matter, it will excel any cherry in cultivation.



Governor Wood Cherry.

During four seasons that I have examined it almost daily while ripening its fruit, my notes vary but four days in noting the time it matures.

Description. Size—among the very largest. Form—roundish heart shape. Skin—rich light yellow, with a beautiful carmine blush slightly mottled or marbled, when grown fully exposed to the sun; the color clear rich red. Stem—varying from 1¼ to 2 inches long, and medium stout to slender. Suture—half round, followed on opposite side by a dark line. Flesh—light, clear rich yellow, half tender, juicy, with a sweetness equal or exceeding Black Tartarian, and with a very delicious flavor. Pit—round, smooth and regular. Tree—round, regular form, and moderately strong growth. Ripe—16th to 22d June.

Black Hawk Cherry.—This is also a seedling of Prof. Kirtland's, which has fruited

regularly since 1845. My notes and figure of it were first made in 1847, and have been compared with the fruit yearly since that time. As a market fruit I think there is no cherry at same time of maturity that will compare with it. As an amateur's fruit to be grown for the desert, those who like Black Eagle will have no cause to complain of this variety. In point of productiveness the Black Eagle maintains no chance for comparison, and in flavor will only hold its own.

Description. Size—with Black Eagle. Form—heart shape, sometimes obtuse and varying to pointed. Color—dark purplish black, when ripe almost coal-black; surface uneven. Stem—stout, inserted in a broad cavity. Flesh—dark purplish black, half tender, juicy, good flavor, rich and sweet. Pit—medium size, its surface undulating like the surface of the fruit. Ripe a few days later than Black Tartarian. Very respectfully. F. R. ELLIOTT.

Cleveland, O., July 6, 1851.

Black Hawk Cherry.

We have fruited for a couple of seasons several of the Ohio seedling cherries of Prof. KIRTLAND, described by Mr. Elliott in a former volume—and can bear testimony to their being a most valuable acquisition to our list of cherries. Rockport, Bigarreau and Kirtland's Mary may be classed with the few most select standard sorts admirably adapted to this climate. We therefore gladly give place to the preceding account of two more new sorts likely to supercede foreign varieties formerly considered first rate. ED.

PRACTICAL HINTS TO CULTIVATORS OF PEARS ON QUINCE.

BY W. E. HOOKER, ROCHESTER, N. Y.

THE pear-loving and pear-cultivating public, have of late years had their attention frequently called to the advantage of growing pear trees worked upon quince stock, both by the writers upon such themes, and by the nurserymen interested in supplying their wants. The advantages and objections to the practice, have been fully discussed by many, and now nearly every one who reads horticultural books, or attends horticultural meetings, knows something about them from experience or observation. Still, there are many who plant their trees, and are disappointed in their own case, and perhaps are disposed to blame those who have led them into the experiment.

My present purpose is not to give any new views of cultivation and management, but simply again to call attention to a few important features which have been before ably set forth, but which are often overlooked by cultivators, who proceed upon the supposition that the same treatment which enabled them to gather pears from trees upon pear stocks, will answer equally well with those upon quince. I desire to remove this mistaken idea, and at the same time encourage the cultivation of this most desirable fruit, in the most satisfactory and economical method.

If we examine the roots of a quince, we find that they are numerous, but not large or long; they do not extend to any great depth in the soil; nor are they inclined to spread a long distance from the stem or collar of the tree; consequently, the supply of food and moisture must be obtained within a small space of ground, and the ability of the plant to

sustain leaves and branches, is of course proportioned to the resources of its roots. If, now, we graft a *pear* tree upon it, whose range of limbs, and of course, of leaves and fruit, is large, and which is provided by nature with corresponding roots, extending deep into the earth, securing firmness to the trunk and moisture to the leaves, without by some artificial means, providing for this disproportion of parts, we must inevitably fail of full success.

In proof of this, we find that those who have planted dwarf pears in grass grounds, without giving them further care, and those who grow them in rich, well cultivated soil, but neglect to diminish the tops sufficiently to enable the quince roots to sustain the tree firmly, as well as those who have allowed their healthy and beautiful pyramids to support an enormous load of fruit while yet in infancy, thereby so exhausting its energy that two or three years nursing becomes necessary, before it is again useful, are not usually very strong advocates for pyramid, or dwarf trees; their own experience, certainly, would not warrant them in recommending their adoption, and if this were the best that could be expected of them, all men would agree, that the less we see of them the better we shall be off.

The obvious methods of avoiding the evils which I have pointed out, are, to secure to the plant a sufficient supply of food, by manuring more highly and frequently than we find necessary for the pear stock, by planting in such soils as do not suffer severely from drouth, by frequent stirring of the soil with spade or hoe, and most especially by abundant mulching; added to this it is indispensible, to reduce the size of the top, by pruning in the winter or spring, and also in some cases during the summer, though I apprehend we shall not in many instances, do so, with that care and patience which M. Cappe, and other eminent foreigners have seen fit to bestow on their pets.

One thing is certain, the man who is not willing to pay some regard to the peculiarities of the position in which the pear is placed when worked upon quince, need not expect to gather as abundantly and continually, as some men do, who have never given a thought to their noble Bartletts and Doyennes beyond stripping from their laden boughs, the luscious fruits, with which nature has crowned the year. But to the good cultivator who can afford to spare an hour, now and then, to care for the wants of his silent laborers, there is an abundant and sure reward laid up, in the vigor, beauty and productiveness of this class of trees.

H. E. Hooker.

STRAWBERRIES AND THEIR CULTURE.

BY A. GERARD HULL, NEWBURGH, N. Y.

Having experimented during the past three years with more than fifty varieties of strawberries, the conclusions reached may possibly benefit neophytes who fancy this delicious fruit. The soil—a clay loam with a hardpan subsoil—was deeply trenched—three and four feet—and richly manured.

1. *Trenching*—*deep* trenching—in this locality cannot be too earnestly commended. Its value may be fully illustrated in a dry season by comparing the crops of trenched and untrenched ground.

2. *Animal* manures can be abundantly used in trenched ground in safety, whether new or old, horse, cow or poudrette, &c.

3. *Moisture* is an essential element in developing size and flavor.

4. *Mulching*, whether of straw, hay, grass, long manure, &c. is necessary for the protection of the fruit from dust, while, in dry seasons, it subserves in a great measure the requirement of dew and rain. Mr. DOWNING'S free and successful trial of *tan-bark* as a mulcher for strawberries will probably give it a preference over other materials. Prof. MAPES considers the *tannic acid* it contains *specifically* applicable to the strawberry, which adds another inducement for its general use.

5. Some strawberries flourish as well, if not better, in rows or in crowded beds. Examples: Crimson Cone, Hovey's Seedling, Iowa, Alpine, Wood, &c. Others, on the contrary, require planting in stools at liberal distances—whether dependent on sun and daylight or circulation of air—if large and fine flavored fruit in any quantity be expected. British Queen, Myatt's Eliza, Deptford Pine, Schiller and Wiley, should never be planted at less distances than two feet, while three and four feet, will enhance their size and quality.

6. Specific *inorganic* manures.—Many strawberry plants apparently demand varied specific nutrition, as much so as different families of trees. A large bed was prepared and divided into three equal portions; one containing *potash* neutralized by muck; another *ashes* treated in the same manner; and last *phosphate of lime* (Bone-dust.) Lines of the same plants extended across the three soils. Boston Pine, Crimson Cone, Iowa, Burr's Seedling, Columbus, Rival Hudson, Late Prolific, Wiley, British Queen, Myatt's Eliza, Victoria, Huntman's Pistillale, Scarlet Melting, Ohio Mammoth and Scioto displayed a sturdy growth throughout this entire triple tract; at the same time they exhibited a positive preference for the potash over the ashes; for the ashes over the bone-dust.

Buist's Prize, conversely, grew more vigorously and bore larger fruit where the bone-dust had been applied.

Black Prince grew with a sickly foliage, producing small and insipid fruit where potash and ashes were used; and the plants were miserable and the fruit almost worthless on the bone-dust tract. Tasting the latter variety from my neighbor, Mr. DOWNING'S *tan-bark* bed, it was certainly excellent; confirming the judgment of its advocates, while the former justified the opinion of its opponents. Another illustration, requiring further attention, offers singular interest touching specific nutrition. A bed of plants, procured as Higgin's seedling, was fertilized with the following inorganic manures: Sulphur flour 1 pint; iron cinders 12; charcoal 40. The color and flavor of the fruit were similar to those of Mr. Downing's Black Prince. The product was enormous as to numbers; the average size approached three inches, and very many specimens exceeded four inches in circumference. Mr. DOWNING and others pronounce this strawberry to be the Black Prince! [We believe Higgins' seedling is a *scarlet* strawberry—the sort sent Dr. Hull under this name, was a very dark colored fruit—undoubtedly the Black Prince. ED.]

7. *Lime*, in almost every form, unless neutralised by fresh muck, or other substances, will injure most varieties of strawberry plants, and vitiate their fruit. The same objection will probably apply to potash in a crude state. A bed of Hovey's Seedling, where crude lime and potash were used, labored through two years of sickly existence, producing small and flavorless fruit, and reached a fatal decline this spring. Last year some vigorous plants of Hovey's Seedling were placed in the border of a bed specifically composed for the pear tree, *phosphates of lime* forming an important proportion. These plants have barely lived, and have not produced a single blossom this season.

I. STAMINATES—of these the following have been selected.

British Queen.—This strawberry far exceeds all others in regard to *size*, *flavor* and *number*. Specimens, four and five inches in circumference, with a delicate polished sur-

face of deep lake, and a rich juicy flesh, are the parents of this opinion. The Queen comes into bearing a trifle later than Hovey's, and continues among the latest, producing fruit about three weeks. It revels in a deep, moist, rich soil, and requires cultivation in stools, at a distance of three or four feet.

Myatt's Eliza.—This beautiful, light scarlet fruit, characterized by its burnished, seedless base, in frequent instances reminding one of an acorn, demands the *first* rank for *flavor* among strawberries. Examples have melted in the consumer's mouth, equalling the peculiar rich flavor of the best pine apple. It is slightly inferior to the Queen in average size and quantity, but later in maturing; indeed, it is later than any large strawberry, a bed being in fair bearing at this moment.

Deptford Pine.—This is a delicious large fruit, intermediate in color to the Queen and Eliza. It has more of the form and glistening surface of the former, and the flavor of the latter, with a degree or two more of acidity. It has proved a shy bearer the present season.

Schiller.—This German strawberry was procured last year from Mr. Hogg, who had imported it, but lost its original name. In vigor of growth, and in its large, free flowers, it exceeds any other plant of its kind. The fruit is paler than the Queen and darker than Eliza; of a capricious conical form; of the size of Eliza; of firm, sound flesh, and of a rich, aromatic flavor, frequently quite acid and sprightly, giving it a preference with some judges over the previous named. It ripens late. These four strawberries are suited only to private culture.

Buist's Prize.—The plants of this strawberry—in rows now three years out—have grown with surpassing vigor this season, and produced fruit equal in size and number to some of the best pistillates. Last year they produced indifferently. The flavor surpasses that of Hovey's, nearly equalling it in size, very many berries measuring four and four and a half inches in circumference. If this be its usual character, Mr. Longworth can allow his anxieties respecting a good masculine standard, to repose on this noble plant, as answering the full requirement. These were cultivated in the triple tract of soil previously alluded to.

Burr's Seedling and *Mammoth.*—These two have produced fruit quite freely in the triple tract, approaching Buist's in size and number. The Mammoth, which has even a sickly and repulsive paleness, has the finest flavor, partaking in a fair degree of the peculiar aromatic taste of the New Pine.

Victoria.—This strawberry was grown in distant stools, and produced fruit, although sparingly, of marked beauty, fine flavor and good size, specimens measuring four inches in circumference.

Iowa.—This energetic staminate presents a massive foliage and produces most liberally, although its light scarlet berries are scarcely over the medium size, and are too acid where better ones can be easily secured.

II. Pistillates.

Hovey's Seedling—sustains its high reputation here for productiveness and size, many specimens exceeding five inches. It is, however, somewhat deficient in flavor.

Burr's New Pine.—This is the finest flavored pistillate of our land. The fruit does not exceed the medium size, and, although prolific, does not equal Hovey's in productiveness. [With us it proves much more productive. Ed.] The plants seem to lose their vigor in our triple tract, and, like the Black Prince, require another and specific soil.

Huntsman's Pistillate.—This plant is a prodigious bearer. The fruit clusters around the base of the plant in rich masses. Some of its specimens measure four and five inches in circumference. It is paler than Hovey's, and *inferior* to it in flavor.

Columbus, *Rival Hudson* and *Late Prolific*. These strawberries of Mr. BURR, of Ohio, are entitled only to medium rank after a taste of his New Pine. The first, however, is a larger fruit, measuring three and a half inches in circumference, and is produced abundantly. The second is a handsome fruit, and in every respect preferable to the Old Hudson.

Wiley—one of the best of our pistillates. It produces on its single stalks, bouquet-looking clusters of fruit, which surpass in beauty all other strawberry groups. The fruit is round, of medium size, and deep red color. The flavor is pleasant—sub-acid and sprightly—rendering it one of our best table strawberries. One hundred and forty flowers and berries on a single plant, which I have had this season, is only a fair illustration of its productiveness.

The Wiley proves the value of open culture. Three years ago, a bed of this strawberry, cultivated in stools, produced surprisingly. Last year the plants were allowed to grow compactly; the yield was not more than one third, and the size and flavor were materially lessened. This year the free, open culture was pursued, that is, the plants were kept in separate hills or rows; the vigor of the plants, yield and character of the fruit, have astonished all by their display.

A plant, which has gained great reputation in our neighborhood under the name of *Alice Maude*, has proved, under Mr. DOWNING'S examination, to be identical with Wiley.

Myatt's Pine.—Plants purchased under this name have exhibited pistillate flowers. Whatever the *true* name may be, the fruit demands a place in the first rank for size and productiveness. The average size of the berries was about four inches; and the clusters of this large fruit were the most prominent of any on our ground. The plants were allowed to grow thickly in a well manured, three feet deep trenched bed. The only inorganic manure was well slacked *lime!* Here is a palpable exception to the hurtful property of lime; and another point gained for specific nutrition of different varieties of strawberries.

Crimson Cone is worthy of a place in every private garden. The fruit—so beautiful in form and color, of such fair size and excellent acid flavor—is a charming embellishment for a table, and precisely the requirement for our fair friends' preserves. It is an abundant producer, and, in luxuriance of growth, ranks with Schiller and Iowa.

Richardson's strawberries—*Early* and *Cambridge*—have not seemingly found with us a congenial soil, and have disappointed us both in size and flavor, after two years culture. Another year may, possibly, afford a more satisfactory decision. His *Late*, on the contrary, is a large and beautiful fruit entitled to rank in every large collection.

Of *Dr. Brinckle's* seedlings—*Cushing* and *Washington*—the former promises well, being, its first year with us, a well formed pleasant fruit, and one of the first to ripen.

Many other strawberries require at least another season to afford a satisfactory opinion. Aberdeen Bee-Hive, North's Victory, Scioto and Duke of Kent may be unhesitatingly discarded when so many superior strawberries can so much more profitably occupy their place.

A. G. H.

Newburgh, July 11, 1851.

Dr. HULL is engaged in some interesting experiments with special manures, the results of which cannot but prove interesting to horticulturists. He has imitated artificially most of the famous vine soils of Europe, and we are looking forward with considerable anxiety to the effects produced by mere soil upon the open air culture of the foreign grape in his grounds.

The foregoing notes on strawberries will be perused with interest by many of our readers. The fact which Dr. H. has arrived at, respecting the pernicious influence of *lime* up-

on most sorts of strawberries, is confirmed by what we heard last year in the neighborhood of Paris, of the difficulty of growing this fruit in the calcareous soil of that vicinity. In our own garden, we have entirely satisfied ourselves of the great value of *tan-bark* for strawberry culture. The beds should be covered with it when the plants are established—to the depth of an inch—an inch or two more may be applied as a protection against the cold of winter, in all situations north of Philadelphia. Its virtues are three fold; 1st, as a fertilizer—tannic acid being a specific manure for this plant; 2d, as a mulcher—keeping the ground cool, the fruit clean, and the weeds from growing; 3d, as a protection against injury by the frosts of winter. Ed.

THE CREAM OF THE ROSE CATALOGUES.

BY JOHN SAUL, WASHINGTON, D. C.

We commend to such of our readers as are likely to be bewildered by the innumerable varieties of the Rose now offered to amateurs, the following select list by an English cultivator of long experience, who has lately settled in the United States. It was originally written for an English Horticultural Journal, but seems to us admirably adapted in the main to this country. All the roses are *ever-blooming*—and ever-blooming roses certainly overtop all other of the present day flowers. We will only add, that the great secret of growing and blooming all this class of roses in the United States, is to put them in beds of loamy soil trenched two feet deep, and enriched with *one-half its bulk* of stable manure—which should have been well fermented first, (unless the beds are made up in the autumn to be planted in the spring—when fresh manure may be used. In such beds, ever blooming roses will form a continued succession of new shoots and blossom buds, during the entire growing season. Ed.

The season is fast approaching when gardeners will once more have to decide what description of plants will give to the flower garden the greatest beauty, fragrance, variety, clearness, and contrast of colors, with continuity of bloom for the longest possible period of time; and, not only are these qualities essential, but it is equally necessary to ascertain what class of flowers will give the greatest pleasure and satisfaction to the greatest number of persons. Were this last question proposed to me, I should answer unhesitatingly, Roses.

The Rose is no longer a summer flower, for we now have autumnal bloomers, surpassing, if possible, in color, beauty, and fragrance, our former favorites of June. Other classes of flowers, such as the Pelargonium, the Fuchsia, &c., have each its own admirers. On the other hand, there may be found those who will say of some plants, however beautiful, "I don't care much about this; it is not a tribe I much fancy." But has this ever been said of the Rose? I think not; I have never yet heard of any person saying, "I don't admire Roses!"

If Roses, then, are such general favorites, how comes it that they have not received that extensive cultivation which they deserve? for it must be admitted that in very few gardens they have received it. Is it because they are difficult to cultivate? Certainly not; no flower requires more simple treatment. Perhaps it may be in part caused by the long catalogue of varieties from which both gardeners and amateurs are puzzled how to select. With this in view, I will proceed to mention a few really good flowers—some of them old

sorts—which are adapted for grouping, and which, from their excellence, cannot fail to give satisfaction to those who may cultivate them.

In the flower garden we formerly had annuals, grouped in abundance to adorn, or, rather, disfigure it. These have given way of late to a more beautiful class of plants, which are annually bedded out, such as Scarlet Geraniums, Fuchsias, Calceolarias, Petunias, &c.; and, with as much propriety, may some of these make way for the grouping in the flower garden, of the more beautiful of the Autumnal Roses; for what can surpass or even equal the dazzling beauty of a bed of Geant des Batailles, Grand Capitaine, &c.; or the magnificence of clumps of Baronne Prevost, La Reine, and Souvenir de la Malmaison, &c.; or the extreme beauty and delicacy of masses of Mrs. Bosanquet, Eliza Sauvage, &c. The following varieties are well suited for this massing system of culture:—

HYBRID PERPETUAL ROSES.

1. *Baronne Prevost.*—Bright rose color, a very large flower, strong, vigorous, free grower, blooming freely from June till November. Always opens its blooms well, whether in the heat of summer, or the cold damp weather of November. Well suited for a large clump. A most magnificent Rose.

2. *Dr. Marx.*—Rich carmine color, large flower, strong, robust grower, opening its flowers freely, both in summer and autumn. Will make a splendid dark mass. A very beautiful Rose.

3. *Duchess of Sutherland.*—Mottled rose color, bright and clear: free, vigorous grower, will contrast with Dr. Marx, or Geant des Batailles. A beautiful flower.

4. *Geant des Batailles.*—Dazzling crimson, the nearest approach to scarlet in this class; very free grower, and one of the most abundant bloomers, flowering from June to December, and invariably opening its blooms well. It will contrast well with any of the light flowers which follow. A bed of this under a bright sun, is almost too brilliant for the eye to rest on.

5. *La Reine.*—Brilliant glossy rose, very large, has the appearance of a true perpetual Cabbage, but much larger; strong robust grower, and free bloomer. This, like Baronne Prevost, forms a magnificent clump. A grand flower, well worthy of its name.

6. *Madame Laffay.*—Bright crimson, very fragrant; free, vigorous grower, and an abundant bloomer from the end of May till the middle of December. Expands its flowers well, and never fails to give them in abundance. One of the most useful of Roses, and admirable for a clump.

7. *Standard of Marengo.*—Brilliant crimson; will, I doubt not, be equal to the Geant des Batailles, but is as yet rather scarce.

8. *William Jesse.*—Lilac crimson, a large and fine flower, strong grower; forms a splendid mass.

BOURBON ROSES.

9. *Bouquet de Flore.*—Bright carmine; opens freely, and blooms profusely from June to November; a strong vigorous grower, and admirably adapted for a mass. A very fine and striking Rose.

10. *Comte d' Eu.*—Brilliant carmine, very showy, and continues to bloom well through the summer and autumn; a moderately strong grower. Forms a lovely bed. Distinct and very good.

11. *Enfant d' Ajaccio.*—Scarlet crimson, very bright; a moderately strong grower. Its only bad quality is, that it will not open well in hot summer weather, but in autumn it is truly brilliant; the rains of October appear not to affect it in the least; I have seen

it at this season, and as late as the middle of November, a sheet of dazzling bloom. Very beautiful and good.

12. *George Cuvier.*—Rosy crimson, fine shape, expands its blooms freely, a moderate grower. Distinct and superb.

13. *Grand Capitaine.*—Velvety, fiery scarlet, very brilliant; opens its flowers well both in summer and autumn; not very double; dwarf habit, well adapted for a small bed, where the intense brilliancy of its flowers will show to advantage. One of the most distinct of Roses.

14. *Pierre de St. Cyr.*—Glossy rose, fine large flower, expands well and blooms profusely; a most robust grower. Will form a splendid clump to contrast with any of the strong growing Hybrid Perpetuals. A superb Rose.

15. *Queen.*—Fawn-color shaded with salmon, very sweet scented. One of the first and last in bloom, while invariably expanding its flowers well, which appear in profusion. Rather dwarf habit, but will form a lovely small clump. Distinct and beautiful.

16. *Souchet.*—Purplish carmine, large flower and a good dark variety; indeed, one of the best of this class for the purpose; moderate grower, expanding its blooms with freedom. Superb.

17. *Souvenir de la Malmaison.*—White with fawn center, very large and magnificent, flowering freely through the summer and autumn, strong grower. This will make a gorgeous clump, in contrast with such Roses as Baronne Prevost, La Reine, &c.

CHINA ROSES.

18. *Archduke Charles.*—Light rose changing to brilliant crimson, a profuse bloomer, moderate grower. One of the best changeable Roses. Unique.

19. *Clara Sylvain.*—Pure white, a superb flower, blooming freely from June till the end of October; moderate grower, suited for a small bed, and the best white for the purpose. Beautiful.

20. *Eugene Beauharnais.*—Beautiful bright lake, a free bloomer through the summer and autumn. One of the hardiest Roses in this class, as well as one of the best dark varieties, free grower, splendid in a small clump. A charming variety.

21. *Mrs. Bosanquet.*—Creamy white; I have heard amateurs call this "the Wax Rose," from its loveliness; a profuse bloomer from June to November, moderate grower. This Rose appears intermediate between the Chinese and what are called Bourbons. Will form a small clump. If possible, more unique and beautiful than any other variety. A truly splendid Rose.

TEA-SCENTED ROSES.

22. *Adam.*—Rosy blush, very large and magnificent, with beautiful camellia-like petals, blooms freely, moderate grower, rather tender, and needs slight protection in winter. Suitable for a small mass. Very fine.

23. *Comte de Paris.*—Creamy blush, a large fine flower, blooming abundantly, growth moderate. A very desirable variety, forming, in a bed, a lovely mass. Superb and very distinct.

24. *Devoniensis.*—Creamy white, buff center. Shall I say the most beautiful of Roses? It has now become so well known as scarcely to need description. Fragrant as well as beautiful. A clump of this is one of the loveliest objects in a flower garden.

25. *Eliza Sauvage.*—Cream with deep orange center, profuse bloomer, and the best yellow for a small bed. Dwarf, delicate habit, requiring, and well deserving a little protection in winter. An extremely lovely flower.

26. *Safrano.*—Deep fawn, very lovely in the bud, a free flowerer, and a moderately

strong grower as a Tea-scented Rose. Being more hardy than the Eliza Sauvage, where that variety is considered tender, or the clump large, this should be used. A very unique and beautiful Rose.

NOISETTE ROSES.

27. *Aimee Vibert.*—Pure white, blooming in immense clusters, very showy. There being a scarcity of good white Autumnal Roses, this will be found useful to group in contrast with the strong growing Bourbons and Perpetuals, in large clumps; using Clara Sylvain, with more dwarf varieties, in smaller beds.

28. *Narcisse.*—Pale lemon; a beautiful flower, blooming in abundance. This is a Tea-scented Noisette of moderate growth, and rather tender, requiring slight protection. Will form a beautiful small clump. A very first rate Rose.

29. *Ne Plus Ultra.*—Creamy white, fragrant, dwarf habit, blooming in large clusters. Like Narcisse, a Tea-scented Noisette, but more hardy than that variety. Will contrast admirably with any of the dwarf dark varieties, such as Grand Capitaine. A very desirable and beautiful Rose.

30. *Ophirie.*—Bright gold and salmon, a strong grower, blooming in rich abundance from the early summer until the approach of frost; even the wet and damp of autumn appear only to give a deeper tint to its lovely flowers. Indispensable, from its color for a large clump where this color is wanting. The other yellows, which are free bloomers, are of too delicate growth, and only adapted for small beds. Pegged over a large clump, which it should be, what an unique mass it forms in the flower garden! Fragrant and very distinct.

This list will be found ample from which to select. The varieties named are all free bloomers, and of first-rate excellence, flowering until arrested by the approach of frost. If grown in masses in the flower-garden, planting but one variety in a bed, and well contrasting the colors, they will be found far more pleasing, as well as more beautiful and fragrant, than the majority of plants at present so employed.

I will just add one or two hints on their cultivation in the flower garden—they are not intended as more than hints. If the natural soil is of a tenacious loam, it will be sufficient to well enrich it with any strong manure, such as night-soil, slaughter-house dung, or any similar strong manure. On the contrary, should the natural soil be very sandy or poor, I should recommend a portion to be taken out, and the bed filled with rich, stiff, fibrous loam, or any such soil that may be at command; well manuring, as in the other case, and thoroughly working up the mass to a couple of feet in depth, mixing the ingredients together. The natural soil I take for granted, is drained; stagnant water about their roots is as injurious to Roses as to any other plants. The distance which they should be planted apart is variable, and must depend on whether the variety is a weak or a strong grower, or whether intended to be pegged over the bed, or grown as a bush. In the latter case they will require a greater distance than in the former. In a general way, I should say, the strong sorts, if to be pegged down, should be two feet apart each way; and if grown as dwarf bushes, from two feet and a half to three feet; dwarf, or moderate growing varieties, a foot and a half if pegged down, or from two to two and a half feet if grown as bushes. In some gardens the pegging down system is indispensable, whilst in others this is immaterial; as amateurs wish to see the beauty of their Roses growing individually as dwarf bushes.

Roses, of the classes I have selected, require, in a general way, but little pruning. The delicate growers require to have the head regulated in winter, and any dead wood cut out. The strong growers, at the same season, should have the gross and weak shoots taken out,

shortening the others moderately, and regulating the head. In summer, as soon as any strong shoots are perceived not likely to flower, the points should be pinched out; and the laterals from these in general bloom well. This applies to all. As soon as the first bloom is over, cut the dead flower stalks back to the next well developed bud, but not too far back; for if this is done the branch will not break freely, whereas in the former case it will soon push out abundance of fresh flowering shoots. Give abundance of liquid manure during the growing season. There is no fear of green centers in any of the Roses I have selected; nor is this a failing common to many of the autumnals.

NOTES ON THE WEARING OUT OF VARIETIES.

BY A. MARSHALL, WESTCHESTER, PA.

A. J. Downing, Esq.—Your learned correspondent, Mr. Townley, in an essay on the "Conditions required for the growth of Parasitic Fungi," published in the Horticulturist for July, uses the following language:—"I may be permitted to say that the evidence of apple trees and other plants seems to me to afford substantial grounds for coinciding with the views advanced by Andrew Knight, that each plant propagated by extension, that is, by buds, cuttings, layers, or roots, instead of seeds, has a limited duration—that it cannot, by any known means, be continued equally healthy and vigorous forever; but that sooner or later the progeny will gradually decline in vigor, become unhealthy and unproductive, not suited to the purposes of the cultivator, and consequently extinct."

The *evidence* of apple trees and other plants! Well, that is coming to the point. As Mr. Townley is in possession of such evidence on the subject as affords him substantial grounds for coinciding in those views, I hope he will be kind enough to lay it before the readers of the Horticulturist, that each one may decide for himself. Some people believe easier than others. Give us the facts, and let each one draw his own conclusions.

Again, (on page 320,) speaking of restoring the potato by seedlings, he says—"It is equally vain to expect, as many have done, that the vigor of the plant can be restored by one generation of seedlings. The progeny of unhealthy and degenerate parents cannot reasonably be expected to be perfectly healthy and hardy."

He first condemns propagation by extension, in comparison with seeds, and then condemns the seedlings too. His hobby evidently trips a little here;—I like to see so bold a rider mounted on a sure-footed nag.

Now, if the evidence shall prove conclusively that trees and plants propagated by extension, do produce degenerate fruit from that very cause, and that alone; that the seeds also partake of the degeneracy, and can only be restored through many generations, if at all; then we may prepare to shut our mouths against good apples and potatoes, for a long time to come.

Seedling apples must be resorted to, in order to restore the fruit to its pristine purity, says our new philosophy. We have the Northern Spy, the Melon, the Mother, the Baldwin, the Jeffries, and many others. Now we want to see the *evidence* that the seeds from which these new varieties were produced, were not of the fruit of some of the old "degenerate" varieties. If this cannot be produced, we may have a long road before us to travel before reaching the summit of perfect fruit, by a wild-goose chase of seedlings.

Our natural fruit, so called, is generally produced from the seed of trees propagated by

extension; therefore, acccording to this new philosophy, we must have nothing to do with them.

In conclusion, Mr. Editor, I would advise your readers to propagate good old varieties of the apple by extension, as they used to do—get fat on the fruit, and not get frightened before they are hurt. Yours, &c. A. MARSHALL.

REMARKS.—This is a very interesting question—the duration of varieties—and one which we shall be glad to see discussed by practical men in our columns.

It is not a little curious that a variety that is considered to be worn-out by cultivators in an old and long settled part of a country, if taken to a new country, or new soil well adapted to it, will immediately resume all its original vigor. This has been lately illustrated by potatoes of old and favorite sorts, that could with difficulty be preserved from the rot in this part of the United States, but which, taken to California and planted, produced immense crops of potatoes, of very large size and unrivalled excellence, entirely free from rot, and showing all the habit of the most healthy new variety. It would appear from such facts as these, (which have given rise to the practice so well known among farmers and gardeners of "changing seed,") that the variety wears out the soil where it is grown before it becomes decrepid in itself.

Mr. LOUDON, in the Suburban Horticulturist, the work on gardening which he published just before his death, gave an excellent expose of the different views on this subject in the following paragraph.

All the plants of a variety which have been procured by division, for example all the plants of any particular variety of grape, apple, or potato, being in fact, only parts of one individual, it has been argued by Mr. KNIGHT, that when the parent plant dies, all the others must die also; or to put the doctrine in a more general form, that all varieties are of but limited duration. This opinion, though it has been adopted by many persons, has not met with the approbation of Professor DE CANDOLLE, who says that the permanence of the duration of varieties, so long as man wishes to take care of them, is evident from the continued existence of varieties the most ancient of those which have been described in books. By negligence, or by a series of bad seasons, they may become diseased, like some of our varieties of apple or potato; but by careful culture they may be restored, and retained, to all appearance, for ever. We are not sure that DE CANDOLLE'S theory will hold good with the finest fruits and florist's flowers. The species might be recovered, but we question whether in many instances that will be the case with the variety. Perhaps a hypothesis might be devised which would coincide with both authorities. It would coincide with that of DE CANDOLLE, if Mr. KNIGHT had spoken with reference to actually wild varieties only; but with regard to improved varieties, as they are understood in a horticultural point of view, they are doubtless prone to decay, in proportion to their degree of departure from the physiological perfection which enables the wild variety to maintain itself continually on the surface of the globe, independent of the care of man. A wild variety will produce seed under favorable circumstances, but many highly improved varieties, in a horticullural sense, do not perfectly mature their seeds under any circumstances whatever; and, therefore, must be physiologically imperfect, and being so, *a priori*, if it be admitted that imperfection is a principle of decay, it will not be denied, that no plant imperfectly constituted can carry on its functions but for a more or less limited time, even under the most favorable circumstances.

THE ANNUAL CATTLE SALE AT MOUNT FORDHAM.

One of the pleasantest events of last month, in the "rural districts," was the annual sale of stock at Mount Fordham, on the 24th of June last.

Mount Fordham, (as all our agricultural readers know,) is the farm and country seat of Lewis G. Morris, Esq., about eleven miles from New-York. You reach Upper Morrisiania by the Harlem railroad, in half an hour from the City-Hall, and three-quarters of a mile from the station lies Mr. Morris' residence.

There is a combination of rural elegance and substantial comfort about the mansion at Mount Fordham, that made the most favorable impression upon us. A country house, solidly built of the stone of the native hills about it, always seems to us to have the genuine look of a homestead, far more than one built of any foreign material, however beautiful in itself, and therefore the genial gray tint of this building pleased us far more than if it had been marble or brown stone. There seems, too, a character of duration and permanence about a stone house in the midst of landed property, that connects itself agreeably with other things in nature that last "as long as grass grows and water runs,"—a feeling that we can never get from wooden buildings, however well proportioned, agreeable in design, or economical in construction. The house at Mount Fordham is a good specimen of a free adaptation of the Tuscan or Italian style to this country, and we saw it first with an undefined feeling of a previous acquaintance. Mr. Morris informed us that he was indebted for the conception of the plan, to our *Cottage Residences*—published some years ago. The house is, however, larger than our design, and had the benefit while in progress of erection, of Davis' talent as an architect, together with Mr. Morris' excellent practical notions of comfort and convenience for the life of a hospitable landholder in the northern states. As compared with many of the residences of gentlemen-farmers, it struck us as being spacious, genuine in character, and agreeable in arrangement, the details bold and appropriate, without any of the frippery ornaments which disfigure many otherwise acceptable modern houses.

We found a large company of gentlemen from all parts of the Union, assembled at this annual sale—which has become a kind of agricultural fete-day, as well as business day, for those who take an interest in improved agriculture. A goodly number of ladies added to the animation and pleasure of the scene, and gave us abundant proof, that with improved agriculture comes a larger and healthier interest in rural pursuits, from intelligent women all over the country.

Around the house at Mount Fordham, extends on all sides a kind of meadow-lawn, enclosed and divided by pretty wire fences of various patterns. This lawn is kept short by the grazing of improved dairy stock, and we were glad to see successfully practiced what we have been commending so strongly of late to our readers, as the most available point of English country places, that we saw on the other side of the Atlantic—that is the maintenance of a neat and handsome lawn about a country house, not only without the expense of mowing, but with united profit and beauty—the profit of grazing the grass and the beauty—the real pastoral beauty—of fine cattle, soft turf, and pleasant groups of trees, as the home landscape of our country places generally. By adopting this course, the *hay-field* aspect of many so-called gentlemen's country-seats, would disappear, and a more complete and satisfactory lawn or park be acquired, with no loss of money, and the attainment of a higher species of keeping to one's country home.

Mr. Morris has done this satisfactorily and well, and we advise those who wish to take a hint from actual practice, to pay a visit of an hour to Mount Fordham.

On the morning of the sale, this meadow-lawn presented an animated spectacle—for it was embroidered with groups of the finest stock—Devons, Ayrshires, the fine Short-horns, which Mr. MORRIS' repeated visits to England have secured to the country, the improved dairy stock which he has bred here upon the spot, fine South Down sheep, blood horses, &c. In the yards about the spacious barns also, Suffolk and other pigs, that engaged the attention of many who were curious in this department.

An admirable luncheon was most hospitably served to all the visitors at noon, and directly afterwards the sale commenced. In the large circle of buyers who surrounded the auctioneer, we noticed not only most of the leading agriculturists who are stock-breeders —the editors of our leading farming journals, and the new-beginners from various parts of the country, who take their initiatory step in Short-horn learning on such occasions, by buying the worst calves sold at the highest comparative prices—but a good many of those whom the public are accustomed to think of as more closely devoted to the production of ideas than the breeding of stock, but most of whom we were glad to learn, had become interested members of the rural districts. BRYANT, the poet, looked thoughtfully in the mild faces of young heifers, and CLARKE, the Editor of the Knickerbocker, seemed speculating whether improved rounds of beef for the "Editor's Table," could be had out of the material before him, while an artist-farmer evidently bid with the feeling of PAUL POTTER in his heart, rather than any knowledge of the *thorough-bred*. Some cockneys, in pumps and white stockings, had stolen out by the train, evidently wondering why the streets had not been watered for the day, and offered a fine contrast to a couple of our quiet imperturbable friends, the Shaking-Quakers, who, in their long brown frocks and broad-brimmed hats, mingled in the crowd, evidently vastly more interested by the stock itself, than by the wit of the auctioneer, or the varied expressions portrayed in the faces of his auditory.

The bidding was spirited, and the second annual sale passed of in a manner highly satisfactory to Mr. MORRIS. Dairy Stock brought prices which denoted a confidence in the public in his labors as a breeder, and a growing interest in the general improvement of our farm animals. This class, consisting of cows, heifers, and heifer calves—twenty in number —averaged $78.87 per head. The pure bred stock, of which comparatively few were on the catalougue, brought still higher prices. It will be understood that Mr. MORRIS reserved, as a breeding stock, a number of his choicest animals—Short-horns, Devons, and Ayrshires—and the future sales of stock may be expected to exceed his former ones in interest and vlaue.

The strictly agricultural journals will give the details of the sale at greater length. What we have desired chiefly to draw attention to, is the steady and persevering effort of Mr. MORRIS, not only to improve the stock of the country, but to set an example of the best management of such sales, and the general condition and treatment of what may be considered the largest class of genuinely comfortable country places in the northern states.

NOTES ON STRAWBERRIES, GRAPES AND PLUMS.

BY N. LONGWORTH, CINCINNATI, O

THERE is a communication in your last number, headed "Staminate Strawberries productive," and refers to Hovey's Seedling, Methven Scarlet, and Burr's New Pine. I have much to learn, if these are staminates. I say they are all pistillates, and wholly defective in stamens. He reports me as saying that neither will produce half a crop, or bear perfect berries, if separated from all others. Here he again errs. I say that neither variety, separated from others, will bear *one-twentieth of a crop of even defective berries*, and I have never yet seen them bear a single perfect one. This is not the first instance of a fair crop from pistillates, separated from all others. Mr. LOCK, of our vicinity, had a fair crop of Hovey's Seedlings with no other variety within 100 yards, and so notified our society. The next season, when his plants were in bloom, a committee went to his garden, and were astounded, for not a staminate blossom was to be seen, and the stems and leaves proved all the plants to be the true Hovey. When about to leave, one of the committee, who did not believe in spiritual knockings, looked under a currant bush, and found a few staminates in full bloom. They were pulled up, and the next season Mr. LOCK had not a single fruit, and so reported to the society.

Another gentleman was equally fortunate with your correspondent. He bought a pistillate variety and planted a large patch, and had a full crop for three years, and so reported to the members of our society. His garden was visited by the members of the society when his plants were in blossom, and they found the staminates were increasing so fast from runners, that they would soon destroy all the pistillates. Nurserymen generally cultivate many varieties on the same border, and it is rare to buy them without a mixture. Even if the varieties are kept far apart, a seedling staminate may come up, and before he is noticed, ungraciously crowd most of his companions out of the bed. The gentleman errs in saying Burr's New Pine produces fruit of the largest kind. It requires but little sugar, is by many admired for its flavor, and is superior to most others when eaten from the stem. But I deem acid strawberries, where sugar is plenty, superior to all others, and among these the Old Hudson has no superior. If the hermaphrodite seedling of Mr. SCHNIKE, in the Garden of Eden, shall in future bear as full a crop as it has done for four years, we shall have but little cause to quarrel about the sexual character of the strawberry plant—for it will do what no plant in England has done, where we hear of hermaphrodites only—bear a full crop of extra large fruit, and of good flavor. McAVOY'S and SCHNIKE'S Garden of Eden pistillate seedlings, at our late exhibition, surpassed all others in size, and to one of McAVOY'S, was awarded the prize of $100, as a pistillate superior to the Hovey in size. Mr. HOVEY'S has for many years surpassed all others in size, and to be entitled to the premium, it was required the seedling should surpass it in size. This, three of McAVOY'S and two of SCHNIKE'S seedlings, had done for three years, on exhibition before the society. We *ignore* your concurrence in the opinion of your correspondent, Mr. Editor, "that pistillates or staminates change their character."

My experience in cultivating the foreign grape, does not correspond with that of your North Carolina correspondent. Against my high garden wall, I have 100 foreign grape vines, consisting of many varieties, and several kinds of native grapes. The natives shoot out as early in the spring as the foreign, and this spring we had a late frost that killed half of the young shoots in our vineyards. Against my walls, the young shoots of the

native vines were the longest, and were all killed down. All the shoots of the foreign vines escaped. I attribute this to the more vigorous growth of the native, and the greater quantity of sap. But this is mere guess-work. The shoots of the foreign and native vines, fifty feet from the wall, were all killed. Foreign vines grafted on our natives, are equally tender as on their own stock, and are with me often killed down to the native stock. I shall be pleased to learn that the grapes of your correspondent succeed better in his southern latitude than in our region. He will be more successful than the vine cultivators were in South Carolina. Mr. GUIGNARD wrote me that *four-fifths* of his wine turned to vinegar; and I know that the wine of Mr. HERBEMONT, sold after his death at auction, was rapidly becoming good vinegar. They were both men of great skill and judgment. There are many things hard to account for. I believe that wind alone will not impregnate hermaphrodite strawberry blossoms. That insects are necessary. On my border, against a high wall fully exposed to the south, and where, from the warmth of the atmosphere, flies and bees congregated, even in our cold weather, my SCHNIKE's hermaphrodite and pistillates, this season, produced a full crop of perfect fruit. Fifty feet distant, my pistillates had not one perfect fruit to 100 blossoms, though in close contact with staminates, and the hermaphrodites had not one perfect fruit to twenty blossoms. Here it was too cold to attract insects. A singular instance occurred in my grape-house. The handsomest grape in the house I got from Mr. BUIST, but under a wrong name. Its true name I know not. The bunch is very large and the grape beautiful. It has ripened fruit two seasons. Three or four blossoms on a bunch were impregnated, and had very large, long grapes, with seed, and of fine quality. The residue of the grapes had no seed, and were not larger than peas. This spring, by merely shaking the vine, all the blossoms are fully impregnated, and the fruit large. My gardener was led to try this experiment from their practice in England with their hermaphrodite strawberries. In forcing their plants in green-houses, they are placed on boards which are jarred to insure impregnation. I had supposed the location of the stamens over the pistils, and the current of air would always insure impregnation. It may do it where the blossom shoot is upright, not where drooping.

You say, Mr. Editor, that Texas and New Mexico may hereafter give us Sherry and Madeira wine. The Herbemont grape is a table grape of superior quality, and the most vigorous growth of any grape in our vineyards. This grape, without the addition of spirit or sugar, will make a wine of the same flavor, and of superior quality to the Manzanilla Sherry, and our Missouri grape, with the addition of brandy, equal to Madeira. I say with the addition of brandy, for brandy is added to Madeira wines. Without brandy, the Missouri makes a superior wine. The vine is hardy, but a delicate grower. The vines should be planted close together and trimmed low.

You say, "no method of securing the plum from the ravages of the curculio, has proved effectual, but placing the trees in the midst of the pig and poultry yard." I have not lost a crop by the curculio in twenty-five years, and in the same time had but two crops in other parts of the garden. I have forty trees planted round the house, with a compact and clean brick pavement extending beyond the tops of the trees. Others have, with good pavements, been equally successful. Some of your eastern writers say, that where their plum trees bend over a stream of water, that that part of the tree escapes the ravages of the curculio. The reason is this, if true. The instinct of the insect teaches it not to deposit its egg where the young must perish when it falls to the ground, and cannot obtain winter quarters. The insect is a timid one. The proximity of my trees to the house, where persons are constantly passing, may aid in keeping off the insect. This is the rea-

son why hog pens often keep them off. Destroying the young will not be a perfect remedy, as the insect flies from garden to garden. Mr. THATCHER, of Chilicothe, in a late letter to our Horticultural Society, speaks of an insect that deposits eggs in his grapes, but which passes by those that hang over a pavement. I find that Dr. HILDRETH, of Marietta, of our state, and Dr. WARDER, Editor of our Western Hort. Review, concur with me in the opinion that insects are indispensible in the impregnation of strawberres.

Yours. N. LONGWORTH.

Cincinnati, O., July 15, 1851.

Foreign and Miscellaneous Notices.

NOTICES OF VARIOUS VEGETABLES AND FRUITS.—*Pomeranian Cabbage.*—Remarkable for its conical tapering form, very compact and firm to the apex. It is very hardy, and likely to prove valuable in situations too cold for the Battersea and other cabbages, grown in the neighborhood of London.—*Jour. Hor. Soc.*, vol. 5, p. 280.

Haricot d'Algiers.—A Runner Bean, from Lorraine, remarkable for its pale color; and the pods being entircly destitute of any lining, they are exceedingly tender and excellent when cooked. Its pale color renders it unattractive, but when known it will be esteemed for private gardens, though not suitable for market purposes.—*Ibid.* p. 281.

Early Peas.—Essex Champion, Warner's Early Emperor, Warner's Early Conqueror, Early Bedalean, Early Railway, and Early Wonder may be considered identical. Warner's Early Emperor is stronger and taller than the Early Kent; not quite so early, but a few days earlier than the Early May. Danecroft Rival, Danecroft Early Green, Farnes' Conservative Green Marrow, and the Transparent Pea are the same.—*Ibid.* p. 282.

Late Peas.—Of fifteen varieties (so called by the seedsmen) the following appear to be the best, as proved in the Horticultural Society's Garden:—*American Dwarf*, sown April 6, fit for use July 8th; about one and a half foot high, a good bearer, ripeniag about ten days later than Bishop's Long Pod. *Stubb's or Burbidge's Eclipse*, sown April 6th, fit for use July 12; a good dwarf for its season, having the peas larger than any other variety equally dwarf. *Hunter's New Marrow*, sown April 6th, fit for use July 18th; larger than Knight's Dwarf Marrow, and of very sugary quality; a good bearer.—*Ibid.* p. 282–3. Hairs' Dwarf Green Mammoth Marrow, two and a half feet high, sown March 11th, in full flower June 24th; six peas in a pod of large size and full flavor; first gathering July 10th, the most prolific and best.—*N. B. Jour. of Hor.*, p. 41.

Cauliflowers were sown on April 9th, and subsequently treated alike in every respect. Of the eight kinds tried, the large Asiatic and the Walcheren proved to be those most deserving of cultivation. It must here be remarked, that April 9th is much too late to sow Cauliflowers to prove in this country; for every gardener knows that a kind that comes good in spring may be almost worthless in a dry hot summer. The early varieties were failures; but the late kinds were good. In experiments upon vegetables, it is important that they should be proved in the best season for their growth. *Jour. Hor. Soc.*, v. 5, p. 24.

Summer Lettuces.—White Paris Cos: Of all the varieties of summer Cos Lettuces, this was the *largest*, the *best* and *longest in running to seed*; it was sown April 10th, and had not commenced to run July 27th, when the other Cos Lettuces sown on the same day were running to flower. *Malta*, sown April 10th; it was only running partially July 27th. A good Cabbage Lettuce, larger than the Neapolitan; leaves dentate, their margins not curled.—*Ibid.*, p. 26.

Neapolitan Cabbage Lettuce.—Sown April 10th; still remained in the cabbage form without running July 27th. Compact, finely blanched, crisp, and tender; leaves having the margins dentate, a little curled. As in the last season, so in this, it has proved the best Cabbage Lettuce. From the above detail it appears that the above are the best summer Lettuces, and that various others reputed new and good, are not deserving of cultivation.—*Ibid.*, p. 26.

The Barker Nectarine, when first introduced from Mr. Barker of Suedia, was noted as producing leaves of globose glands, large flowers, and *peaches* of little merit. Subsequently, one small twig was observed having reniform glands. Buds from this were taken and worked on a tree against the south wall, and the fruit proves to be the Nectarine. Leaves with reniform glands; flowers small; fruit large obovate, dark red next the sun; pale yellowish green where shaded. Flesh fine, yellowish white, rayed with bright red at the stone, from which it parts freely; rich in this unfavorable season (1850;) but scarcely so aromatic as the Violette Hative. Stone larger than that of the sort just mentioned, flattish, obovate. Kernel *bitter*. This variety is quite distinct from the Stanwick Nec-

tarine, originally obtained from the same gentlemen, the one having a sweet, the other a bitter kernel.—*Ibid.*, p. 25.

Walburton Admirable Peach.—Raised near Arundel, Sussex, and supposed to be a seedling from the Noblesse, which it much resembles, but is more valuable in quality, in consequence of its ripening from three weeks to a month later, or about the same time as the late Admirable Peach. Flesh melting, parting freely from the stone; leaves serrated, glandless. Ripe and in fine perfection this season, (1850,) the first week in October.—*Rivers in Florist*, p. 11.

Strawberries.—Of these, Keen's Seedling, Princess Alice Maud, British Queen, Old Pine, Comte de Paris, and Elton, are recommended as the best by Mr. Whiting; and Black Prince, Wilmot's Prince Arthur, Kitley's Goliah, and Myatt's Surprise, as being worth a trial.—*Florist*, p. 9.

Market Gardening.—The land can well sustain so much cropping, on account of the heavy dungings, trenchings, and hoeings, which it receives. If you ask a market gardener what is to succeed this or that crop, the answer is "Don't know; it depends upon what is ready for planting." Continued trenching two spades deep seems expensive; but market gardeners know that after an active crop the top soil for several inches is quite exhausted, and hence the reason for continued trenching, to bring up the top soil that but a few months before had been turned down, with a large proportion of dung to enrich it, and fit it for active use along with the half decayed manure. The laborers employed on 150 acres are seventy during winter, and in summer about 150. The cost per acre is from £9 to £10; the tithes being 10s. to 12s. per acre. Some idea of the amount of labor consumed on small matters will be conceived when I state that the whole of the frames, amounting to one thousand lights, and the hand glasses, to four thousand, are repaired every autumn.—*Gard. Chron.*, p. 4.

Dickson's Emperor Apple.—Size large, form irregular, slightly ribbed, color yellow, with dashes of carmine red interspersed, as well as with numerous minute specks of yellowish straw color; the side most exposed to the sun colored with a rich reddish brick color; stalk unusually short for so large a fruit; indicating that it will not be liable to be blown from the tree by the wind, an important merit; eye very large, irregular, and very deeply sunk, cavity for seeds small; flesh yellowish white, juicy; flavor excellent, keeps till January; bears abundantly as a standard, and is certainly one of the very best apples in existence. It was raised at Seacliffe Gardens, near Prestonkirk, Scotland, by Mr. Arthur Calder, the gardener there.—*N. B. Jour. of Hort.*, p. 27.

Grafting Cacti.—Mr. J. C. Bidwell, of Tinana, New South Wales, recommends Cereus triangularis as being a superior stock for grafting the trailing kinds upon. He states it will bear great heat, considerable coolness, any amount of wet above ground, and in rich soil will make a shoot six feet from a cutting of six inches in one season. "My advice to gardeners in England who wish to procure gigantic specimens of slow-growing Cacti in a short space of time, is to procure plants of C. triangularis, plant them in any rich soil, give them plenty of heat and water; when high enough, stop the shoots, in order to make the angles thicker, and graft at a time when the stock is attempting vigorously to sprout at every eye. A graft of C. Mallisonii, three inches long, six months after, has seventeen shoots all pushing at the tips: eight of the largest are twelve to fifteen inches long, and none of the rest less than six inches." The original plant of C. Mallisonii, growing in the same place in the same time, barely replaced the shoot taken off to graft.—*Gard. Chron.*, p. 22.

Oxalis Bowei, in the open garden. "The earth was removed to the depth of two feet; I then introduced eight inches of drainage, laying on the top of it a layer of fresh turf, with the view of preventing the soil falling into the interstices. I then filled up the bed with equal parts of well-rolled turfy loam and leaf-mould intimately mixed together. In May I turned out the plants, and placed them so that the bulbs might be three inches below the surface. Thus circumstanced, I have never found them to receive any injury, with the exception of the foliage being destroyed by frost. They flower beautifully every autumn."—*Ibid. p.* 39.

Nursery Reform.—Mr. Rivers, in the last number of our excellent contemporary, the *Florist*, has successfully stripped of its rags one of the idols which the folly of collectors has set up for the admiration of simple gardeners. "Nothing in floriculture," he says most truly, "has marched so rapidly and steadily onward as an improved and common-sense taste for roses. It is only a few years since all the gardening world used to talk of the 2000 varieties of roses grown by the Messrs. Loddiges; and happy was the amateur who could beat his rival by a score or two of varieties; I mean varieties in name, and not in fact. In this we had, with our usual national weakness, copied our neighbors, the French, who will even now say to their English visitors, 'Ah, Monsieur, have you seen my new Rose?—*la voila!*' and then you will have pointed out to you a seedling from La Reine, with an accidental stripe on each petal; or a seedling from Madame Laffay, with smaller flowers than its parent: then takes place the following dialogue:

"*English Florist.* These are of no use, Monsieur; they are not distinct enough.

"*French Florist.* Monsieur, distinct! they are *new*.

"*E. F.* New or old, they are of no use, I tell you: have you a scarlet La Reine, or a yellow one, or a white Madame Laffay?

"*F. F.* Monsieur, *c'est impossible;* but stop!

I have fine new roses from La Reine, all superb! *Voila* Perpetuelle, Coupe d'Hebe.

"*E. F.* Why, your seedlings are all pretty, but they are not distinct enough. But at what charge do you propose so sell these seedlings? for although of nearly the same color as their parent, I should like one or two if not too dear.

"*F. F.* Monsieur, *they are new.* What a horrible word is that 'distinct' of yours; I pray you do not use it. But for my seedlings I must have a high price, as I will deliver to you all the property in them; let me see, for No. 1 you must give 100*l.*; for No. 2, 125*l.*; for No. 3, 150*l.*

"*E. F.* Stop, stop, Monsieur! I will not give you one hundred shillings for your 'propriete;' they are not *distinct* enough.

"*F. F.* Monsieur, what a horrible word! it kills me."

It is satisfactory to find a man like Mr. Rivers joining us in an attempt which we have so long been making, to persuade the world to distingush between selection and collection. We accept him as a stout recruit, from whom good service may be expected. His trade experience tells him much that we know nothing of; we suspect that it tells him, among other things, how unprofitable it is to swamp a nursery with things which only a few curious people ever ask for. Let us add that he has to some extent carried out his principle in the last edition of his sale catalogue, by cutting down the varieties with no sparing hand. For instance, he now offers for sale only 67 varieties of Hybrid Perpetual Roses; while a neighbor enumerates 110.

But why keep 67 of these varieties? Can it be said that among them there are 67 distinct peculiarities—of growth for instance, or foliage, or color, or form or season. And if there be, are the distinctions always of horticultural value? Assuredly not. No one who only regards the decoration of a garden can possibly want 67 sorts of Hybrid Perpetual Roses. A dozen of the best are worth all the remainder. The object of the gardener should be to obtain the finest possible result by the simplest and most unexpensive means. Let us suppose that he has space for 60 roses; if he plants 60, so called different sorts, he will produce an effect about as good as that of an old-fashioned patchwork quilt. No skill can combine such materials into a harmonious whole. But suppose he takes half a dozen of the finest growers, the longest bloomers, and the most distinct colors; with these he may really exercise what skill he possesses in creating a brilliant scene. Mr. Rivers himself points this out:—"Amateurs are not now content with mixed beds of roses; all our finer sorts are planted in masses: thus, in some rose-gardens formed this season, the beds are made to contain from 50 to 60 plants each; in olden times, these would each have had 50 varieties, forming a patchwork of color; now they are arranged so as to form masses of distinct colors. Thus, No. 1 is Baronne Prevost; No. 2, Doctor Marx; No. 3, Madame Aimee; No. 4, Geant des Batailles, and so on; now these crimson and blush and rose-colored large groups must have a fine effect." Certainly they must: and an effect that not only cannot be rivalled, but cannot be even imitated by any higgledy-piggledy arrangement whatsoever. Let us hope, then, that the intelligent rose-growers will combine to carry out this principle of selection, saving themselves much trouble and loss, and their customers endless vexation and annoyance. For who is to know what to select from a legion of queer names? or how to produce a beautiful effect with materials of whose quality he cannot possibly have any knowledge?

We have often urged this point upon the consideration of the trade, and we are glad to see that the force of our arguments is beginning to be felt. In the majority of the lists this year, issued by the most considerable nursery and seedsmen, a very appreciable reduction has been made in the names of varieties offered for sale. Men are beginning to see the impropriety of mystifying their customers, and we may add the unprofitableness of it. But nothing like enough has yet been done. Annuals, hardy plants, green-house plants, hot-house plants, Orchids, all the race of florists' flowers, and fruit trees of every description, are quite as much in want of the weeder as roses and kitchen garden stuff. Of what possible advantange, for instance, to any one in Great Britain can be the 1,400 sorts of apples, or 677 of pears, or 89 of figs, or 182 of grapes, or 360 of gooseberries, enumerated in the last edition of the Horticultural Society's "Catalogue of Fruits." Why, fifty apples, five-and-twenty pears, half-a-dozen figs, a dozen grapes, and as many gooseberries, answer every purpose—except that of curiosity. The remainder may as well be consigned to the rubbish heap.

We know how unpalatable these truths will prove to some of our enthusiastic friends, who cling to their collections with as much tenacity as a lawyer to old statutes, or a venerable lady to still more ancient china; but we entertain no doubt that they are becoming rapidly acknowledged as truths all over the country, and that the interest of every man consists in their recognition. In former days, the object was to have something *new;* the purpose now-a-days is to obtain something BETTER; *variety* is not the presnt consideration, an anxions desire for IMPROVEMENT has taken its place; and long may its place be thus occupied. Time is rapidly proving that the fancies of our predecessors must give way before the utilitarianism of this age, and that to maintain the former has become as undesirable as it is impossible.—*Gardeners' Chronicle.*

HOTHOUSES IN THE TIME OF THE ROMANS; BY M. DUREAU DE LA MALLE.—In the memoir a short time since read to the Academy upon the

subject of Roman hothouses and pits, heated artificially, I omitted several quotations which proved my statements, and they have consequently been impugned. My first authority is Columella (XI., 3, 51, 53.) Tiberius being in ill health, was advised to eat cucumbers every day. The Roman gardeners cultivated these vegetables in frames, containing hot dung, and exposed to the sun in front of a wall. The frames were, moreover, on wheels, so as to be easily moved into, and continually placed in the sun's rays, and were, in addition, furnished with pieces of talc, by which they were covered at night, and by which the plants were protected from frost and cold. "Thanks to this invention," says Columella, "Tiberius was supplied with cucumbers at nearly every season of the year (*fere toto anno.*") Martial (VIII., 14,) the contemporary of Domitian, who had in his palace a hothouse, containing exotic plants, called Adonea, describes a glass hothouse, belonging to one of his patrons, which was set apart for similar plants, as follows, in one of his Epigrams:—"As you are afraid that your pale fruit trees, natives of Cilicia, cannot withstand the winter, and that a too cold wind may nip your delicate shrubs, you take care that by panes of talc the chilly wintry blast may be kept off, and that nothing be admitted but sun and a genial air; and yet I have nothing but a miserable lodging, with a window that does not fit, and where Boreas himself would not find a habitation. Is it thus, cruel man, that you lodge an old friend! I had much rather be the guest of your tree!" The use of some heating apparatus is here clearly referred to; but Seneca (Letter 122) tells us that the Roman hothouses were heated by steam. He denounces the unbridled luxury of his contemporaries. "Do not those live contrary to nature who require roses in winter, and who, by the use of hot water, and application of heat, compel the lily to blossom in winter, instead of in the spring?" It is remarkable that the most direct evidence of the use of hothouses by the Romans should be furnished by a poet and a philosopher.—*Comptes Rendus.*

London Hort. Society.—The event of the past week has been the second show of the Horticultural Society at Chiswick. A sunless but dry day brought together 9383 visitors, forming such an assemblage of rank and fashion as is to be seen in these gardens only, in the open air, near London. At an early hour the exhibition had the distinguished honor of being inspected by her Royal Highness the Duchess of Orleans.

In speaking of the objects presented for examination, we can do little more than repeat what we have said on recent occasions, namely, that the great and important feature of the exhibition was the total absence of ill-cultivated specimens. There were various degrees of excellence, but everything was excellent in its way. We may even add that the worst plants exhibited last Saturday would have swept away the first prizes 20 years ago. The miserable penny-pressed Pansy flowers, which once collected a crowd of simple admirers, would now be considered a disgrace to the place, and are satisfactorily represented by well cultivated specimens in pots. The gawky straggling half-starved sticks, first exhibited as roses grown in pots, are replaced by plants of exquisite beauty prepared with unrivalled skill. And let us add, in justice to one class of exhibitors, even the Cape Heaths, which were for so many years produced in silly imitation of beehives, or Hottentot kraals, have at last been permitted to assume their natural forms. The pruning-knife, in moderation, has taken the place of the shears with which some innocent gardeners thought it necessary to clip their bushes into shape (!), and the genus Erica now merits, for its beauty, the high place in these exhibitions which was once given it merely because of the difficulty attending its cultivation.

As to Orchids, the fondness for them is evidently extending; new and good exhibitors are threatening the ancient lords of the region of epiphytes; and we have no doubt that in a few years the sanguine expectations of our friend "Dodman" will be realised, through the instrumentality of Mr. Williams' capital practical papers, now appearing weekly in our columns. The continual sales by auction of these plants afford opportunities of purchase suitable to the means of different classes of buyers, and it is not extravagant to predict that Orchids will some day be as common as Heaths and Pelargoniums. It is not impossible indeed that they may dislodge the latter, admiration of whose tawdry charms is more and more clearly on the decline.

As usual Messrs. Veitch, of Exeter, stood pre-eminent among the exhibitors of new or rare plants. Their exhibition of Pitcher plants was one of the most remarkable sights that have yet been chronicled in the annals of Horticulture. Some, the Nepenthes, from the forests of the Indian Ocean, threw abroad their tendrils, and suspended their curious bags of green and crimson and white by whatever they could cling to. Others, the Sarracenias, from the swamps of North America, stood erect, like living trumpets, or imitating ewers and jugs of green and crimson; even while the spectator was looking at them, the unhappy fly might be seen entrapped amongst the relentless teeth with which the recesses of these cups are guarded. The most curious of all, perhaps, and the most beautiful in form, was the Cephalote, from the Australian bogs, whose delicate goblets reared their richly-carved and many-tinted crests above their bed of moss. No one in the world except Mr. Veitch could produce such an exhibition as this. He had also a new yellow shrubby Calceolaria, with leaves like a Peach-tree; a curious Aster-like plant from New Zealand, said to be a hardy evergreen shrub; and the Eucalyptus coccifera of Van

Diemen's Land, a tree with glaucous leaves and an abundance of large white flowers, which has lived without injury for several years at Exeter in the open ground, where it is now 20 feet high.

New hybrid plants are slow in appearing. The only one which caught our eye was a hybrid Pelargonium obtained between the lemon-scented (*Citriodorum*) and one of the Fancies, by Mr. Thomas Kempster, of Blackheath. His object was to add good flowers to sweet foliage, and we are glad to see that he is evidently on the road to success; the specimen exhibited was very pretty, and was accompanied by a cross between Radula and Rollisson's Unique, which we also look upon as a good beginning. If growers would but persevere in this way they would soon strike a rich vein, and occupy themselves more profitably in every sense, than in trying for results which only end in running out their breed. What is wanted among Pelargoniums is new blood, of which the wild species can furnish an abundance.

Among miscellaneous objects, was a remarkable collection from Syon, consisting of a tree bearing ripe nutmegs; a branch of Vanilla with flowers, and ripe as well as unripe pods; a Gamboge-tree, with rich orange fruit; and a piece of the Serpent Trichosanth (*Trichosanthes colubrina,*) loaded with its long striped and twisted Cucumbers.

Of Mr. Hosea Waterer's magnificent display of American plants in the Society's Garden, we spoke at length last week. On this occasion it was open to all visitors, throngs of whom were gratified by one of the most varied and beautiful spectacles which the gorgeous varieties of Rhododendron and Azalea can produce. Under the influence of the beauty of so grand a scene the clumsiness of the awning which screened it from the weather was hardly remarked. A few hours however after the close of the meeting this awning gave way before a gale of wind, and it became necessary to close the ground for some days, till it could be repaired. This has naturally given rise to expressions of surprise, and to inquiries, which we take this opportunity of answering, by stating that the awning in question (not furnished by Mr. Edgington) was contracted for by the gentleman lately removed from his office of Secretary by the Fellows of the Horticultural Society, at their anniversary meeting; and that the contract was made, not only without the concurrence of the proper officer, but in opposition to all experience and remonstrance.—*Gardeners' Chronicle.*

Russian mode of Preserving Green Peas for winter use.—The peas to be preserved are chosen full grown, but before they become at all farinaceous; they are carefully shelled, and all damaged ones are picked out rom the sound ones; the peas are then thrown into water whilst boiling on the fire; the instant the water resumes the boil after immersion of the peas, it is expeditiously strained off from them, the peas are then immediately spread upon a cloth and turned over on it till all loose moisture has been soaked up; the peas are then dried gently in the coolest part of a Russian oven-like fireplace. Green French beans are dried in precisely the same manner, but the pods require to be cut into narrow strips previously to scalding them. Both green peas and green French beans dried are sold at a very moderate price at St. Petersburgh. When either of them is to be prepared for table, they are soaked for a short time in lukewarm water, just enough to cover them, then gently stewed in it, with the addition of either gravy or a white sauce, and seasoned with sugar as well as salt and spices. Green peas for winter use have been perfectly kept in England by simply bottling them like green gooseberries, but much care is required in the process to avoid different sources of putrefaction, such as damaged peas and moisture. Green French beans may be preserved till winter by keeping them in brine just strong enough to float an egg; the beans must be entire and without blemish. In preparing them for the table they should be washed in warm water; if then found salter than desirable, they should be soaked two or three hours in lukewarm water, before being put into that in which they are to be either boiled or stewed. Green rye is also dried in Russia, is esteemed a great delicacy, and sells in St. Petersburgh for eight or ten times the price by weight of either green peas or green haricot dried.—*Gard. Chronicle.*

Preserving Fruit.—We have frequently been asked, what is the best mode of preserving fruit, and whether there are not chemical means of keeping it, so that it may be preserved fresh and wholly unchanged for a long time; either by placing it in contact with some substance which shall counteract its tendency to spoil, or by plunging it in some gas or liquid which will prevent it from decomposing. There have been a great many attempts to do this, but they have all been attended with but very partial success. Fruit, for the most part, consists chiefly of sugar, gum, starch, cellular matter, water, and a small quantity of albumen and gluten; but besides all these, it also contains certain other substances, such as coloring matter, and a small quanity of some highly fragrant volatile oil, to which the taste and agreeable smell of the fruit is due. The most changeable component of fruit, therefore, is the azotised matter, which is generally that which first of all commences to decompose; usually, too, air is necessary to its change, and consequently those fruits which have thick dense skins, dry and shrivel up, when they are kept, without being spoilt. In drying, of course they lose some portion of the volatile flavoring matter, but they also retain some, and they may be kept for a long time, without their either putrifying or fermenting. The more delicate and highly flavored fruits, how-

ever, are not of this description; their skins are so porous and open, that they very soon allow the air to pass into the interior of the fruit, and consequently it is impossible to preserve them by drying.

The immediate consequence of air coming in contact with the pulpy matter of ripe fruit, is that the azotised matters begin to absorb oxygen, and decompose; then the sugar, starch, and gum are acted on; the flavor is rapidly destroyed, sometimes spirit is formed, the sugar simply undergoing the vinous fermentation; at other times, the change goes on more rapidly, and the fruit soon becomes putrid. All these effects may be easily observed, by watching the ripening of any of the common varieties of fruit. The drying up of ripe grapes, which are left to hang with their skins uninjured, and the immediate change which occurs if the skin is injured or punctured, is familiar to every one. The rapid change which takes place in ripe Gooseberries, when the skins burst, and which, in the first instance, is a mere case of common vinous fermentation, is also well known. The injury which all fruit sustains from bruises, though it often does not produce the same effect, is yet in chemical nature very similar to that which occurs in the gooseberry. The cause of the evil in all cases is the oxygen of the air; and the mode in which it acts consists in the skin or cuticle being destroyed or injured, so that the air finds an easy entrance through the damaged part. In the case of delicate and thin skinned fruits, they are so porous that the air enters on all sides, as soon as they are fully ripe, and even though they are not in any way injured, and this constitutes the chief difficulty in preserving them.

The fresh juice of the grape readily ferments, as soon as it is exposed to the air, but the juice of a raisin or half dried grape no longer has the power of doing so, because it contains too much sugar to ferment. A weak solution of sugar, under favorable conditions, soon begins to ferment; whilst a strong one is unable to enter into the vinous fermentation. It is in part, on this fact, that the common mode of preserving fruits by means of sugar depends. In making preserves, too, the fruit is heated, and heat, by rendering the vegetable albumen solid, makes it less likely to decompose. The preservative influence of heat on all forms of organic matter is well known; the value of heat in preventing the decomposition of food generally, was minutely detailed by Appert in 1810, for which he was rewarded by the French Government with a sum of twelve thousand francs.

But both heat and sugar, though no doubt very useful agents in the preservation of fruit, are very far from being quite satisfactory; and though, by their use, the fruit may be prevented from undergoing actual fermentation, yet more or less of the flavoring matter of the fruit is always destroyed or lost. What is wanted is a means of preventing the decomposition of the fruit, without the use of any substance which could injure its flavor, either by the addition of a new flavor or the destruction of the natural one. After what has been done already in the storing and preservation of some sorts of fruit, and the improved modes of keeping it which have been devised, we do not altogether despair of a satisfactory mode of preserving the more delicate kinds being discovered, although most of the recorded experiments which have been made with that view are certainly not very encouraging. The experiments usually referred to on the preservation of fruit by chemical means, are some which were made by Dr. Henry in 1776, and described in the fourth volume of Dr. Priestley's "Essays on Air." The fruit in these experiments was suspended in carbonic acid, so that it was kept in an atmosphere containing no free oxygen. A bunch of grapes exposed to carbonic acid remained fresh and plump for six weeks, whilst a corresponding bunch placed near it in a similar vessel, containing common air, was quite mouldy in three weeks. A second experiment was made with some ripe and rather stale strawberries, which had been gathered the day before; the following day those which were exposed to the air had lost their taste, whilst the fruit kept in carbonic acid, "had become more dry, but was fragant and well tasted; their fragrancy was even thought to be improved." On the fourth day, those in air became quite musty and mouldy, whilst those in carbonic acid were some of them firm, and had still a moderate degree of flavor at the end of eight days.

In this experiment of Dr. Henry's there are two points which were decidedly against the preservation of the fruit, namely, that the fruit was already stale at the commencement of the trial, and that the carbonic acid employed was not pure, but contained common air. A number of similar experiments have since been made, the general result of which has been, that though the fruit kept well, it wholly lost its flavor; but we do not think that there is any reason to despair of ultimate success. It is plain, from all the trials which have been made, that it is easy to prevent the decay or fermentation of fruit; the difficulty is rather to preserve its fine flavor, and prevent it from becoming tasteless and insipid. When an apple is bruised, the part thus injured soon turns brown, decay commences, it becomes mouldy, and the whole fruit soon rots; and this decay easily spreads from one apple to another. If a little hole is cut through the skin of a sound apple, and a small piece of a rotton one is inserted under the skin, the sound fruit will soon be brought into a state of decay; but if this is done in a jar of carbonic acid, no such effect will take place—the sound apple will remain fresh, even though there is a portion of decayed apple in contact with it. The flavor of fruit is apt to be spoilt, not merely from the loss of the peculiar volatile oil which it contains, but

likewise from the absorption of other volatile substances; for fruit of all descriptions has a very remarkable power of absorbing odorous matters of various kinds.

Amongst the many plans for preserving fruit which have been described, and which more or less depend in principle on the exclusion of air, such as packing it in close sealed vessels, wrapping in fine paper, covering the ends of the stalks with sealing-wax, or arranging it in boxes filled with thoroughly dry sand, bran, straw, fern, or other similar substance, the greatest care in all cases must be taken that the packing material has no odor; for if it has, the fruit, besides losing a portion of its own natural aroma, will acquire some of the odor of the packing material, and the delicate flavor of the fruit. and consequently its value, will be destroyed. On the other hand, when fruit is preserved by cold, and especially when for this purpose it is gathered before it is perfectly ripe, it is often found that on removing it from the ice-house or cold well in which it has been preserved, though at first it has but little flavor, yet that on gently warming it and keeping it a few days, the flavor improves and decidedly increases. This and other similar facts may fairly lead to the consideration, whether the odor and flavor of fruit which has been preserved some time in carbonic acid, nitrogen, or hydrogen, and which has in consequence become deteriorated, is, in truth, really altogether destroyed; and whether it might not be possible to recover the whole, or at least a portion, of the lost flavor?

The absorption of manure, or rather manner in which plants fed with very strong manures acquire a peculiar and often very disagreeable flavor in consequence; and also the curious way in which the odor of flowers is sometimes modified by the absorption of particular substances, are probably also examples of the facility with which vegetables absorb odorous substances. Concerning the formation of odors by plants, very little indeed is known. There are, however, a number of curious facts bearing upon the subject, and showing how volatile odors, closely resembling those secreted by plants, are sometimes formed in the most unexpected manner. Thus, for example, in the process of bleaching rags by chlorine for making paper, it frequently happens that the bleached pulp has precisely the odor of ripe apples; this is evidently due to the presence of some substance formed by the action of the chlorine.—*Gard. Chronivle.*

New Tree Pæonies.—We have lately received from Mr. Verschaffelt. of Ghent, flowers of two tree Pæonies of admirable beauty.

They were intended for exhibition in London, but would not keep for that purpose.

One was rosy pink, large, and uncommonly showy because of the very fine color of the flowers. When full blown they measured 7 inches across; but in this state they showed quantities of stamens in the centre, and some of the petals, though all of good substance, were much longer than the others, giving the general aspect of the flower a somewhat ragged appearance.

The other was French white, shading off into rose at the base of the petals, and rather smaller, but more double and regular, and consequently more compact, holding together well, even after it had been cut a very long time. Both kinds were exceedingly handsome, as all tree Pæonies are. A well grown specimen ornamented with such flowers in even tolerable profusion must produce a magnificent display.

We understand that these were produced by Mr. Charles Goethals, a gentleman residing at Ghent. The darker kind, called Gloria Belgarum, is described in the "Journal d'Horticulture Pratique," as a seedling which, in 1844, had flowered for five successive years. and at that time was producing blossoms at least 10 inches in diameter; a single plant bearing seven of them. It would seem that they are now appearing in great abundance, Mr. Verschaffelt having been able to forward four of them. Certainly these Moutans are among the finest we have ever seen.—*Gard. Chronicle.*

The Acuminate Onion.—A few bulbs of this charming plant were sent from California to the Horticultural Society, by Mr. Hartweg, and flowered last spring in the Chiswick Garden, in a greenhouse. It is, however, in all probability, hardy, if kept in a place dry in winter. The name onion conveys to an English ear ideas of anything but beauty, for many common species are as ugly as plants well can be, and the handsome kinds are almost unknown in gardens. Nevertheless, in a genus consisting of nearly a couple of hundred species, many may be found which ought to take rank with hyacinths and jonquils; of these, the moly and the magical onion are well-known examples, though now-a-days confined to curious collections; and the rare species here figured is another, much handsomer than either, and probably the queen of the family. Its gay flowers, almost transparent when colorless, and stained with the richest rose color near the points, can scarcely be regarded as inferior in beauty to the Guernsey lily itself, and they are far less fugitive. Were it permitted to suppose that a plant so similar to onions in most respects could form a separate genus, one would be tempted to place this apart, for it wants their smell, and is most remarkable for its petals being considerably smaller than the sepals. But no other difference being perceptible, we must believe it to belong to the group of which allium roseum forms one. At first sight it would seem to differ from the acuminate allium described by Sir W. Hooker, in his "Flora-Boreali-Americana," in the absence of toothings from the petals, in the smallness of those parts, and in stature; being a much larger and more handsome plant than Sir W. Hooker's figure represents.—*Paxton's Flower Garden.*

Domestic Notices.

The Prize Strawberry.—The prize of $100, offered some three years ago by the Cincinnati Hort. Society, has been awarded this season to Mr. McAvoy, a cultivator of that vicinity. As Cincinnati is noted as the finest strawberry market in America, and as the horticulturists there are especially acute in strawberry lore, we naturally look for great merit in this prize production doubly endorsed. The fruit committee, in their report, speak of it as follows:

"McAvoy's No. 12 Seedling, we propose to call *McAvoy's Superior;* the specimens exhibited are superior to Hovey's Seedling, or any other strawberry that came under the examination of the committee, and it is entitled to the premium of $100 offered by this society in 1847."

Seedling Apricots.—It is not a little remarkable, that numerous as are the fine varieties of peaches originated in this country, many of them so much better adapted to our climate than any of foreign origin, no one appears to have taken any pains with originating superior new apricots. The only native seedling of any mark that we know—Dubois' Early Golden—is far hardier, and more productive than any foreign sort, if we except the Breda, and there cannot be a doubt that a little pains taken in raising apricot seedlings, would reward us with fine new sorts of this agreeable mid-summer fruit, which would thrive with half the care now bestowed on European sorts—most of which are of tender origin.

At the present time, the apricot seems to succeed better in portions of Virginia, than in almost any part of the Union.

Gigantic Strawberries.—We understand from an eye-witness, that Mr. Pell, at his celebrated orchard farm, Pelham, on the Hudson, has raised the largest strawberries ever grown in the country. The variety was Hovey's Seedling. The largest berry weighed 2 ounces, and measured 8¼ inches in circumference. We hope Mr. Pell will give our readers the key to this mammoth size—as we understand it is the result of careful experiment.

Pomological Convention.—*Dear Sir:* In reading the pages of the July Horticulturist, I notice you speak of the next Pomological Congress to be held at Philadelphia *this* coming fall. As this is undoubtedly an oversight on your part, and might not be noticed, without your attention was drawn to it by some one, I desire to remind you, that the meeting at Philadelphia is to be held in *the autumn of* 1852. Yours respectfully, F. R. Elliott. *Cleveland, O., July* 8, 1851. [We thank Mr. E. for correcting the error into which we had inadvertantly fallen. Ed.]

Curculio Extirpator.—A. J. Downing, Esq.: It has been the study of a great many practical men and amateurs, of late years, to devise some means for the destruction of the curculio; but as yet, I believe, with no considerable degree of success. Although I have read in your Journal the reports of various gentlemen, stating their entire success in extirpating this insect, I am led to believe their discoveries have not led to any general results.

I have never as yet seen in the writings of any persons on this subject, any invitation to visit their place, for the public to be convinced of their success. The depredations of this worst of all pest, have attained such a magnitude that I think any party claiming to be able to subdue the curculio, should offer proofs of their theory by saying, "come and see, and believe." Occular demonstration is satisfactory to all parties. This I suggest, because then no one will be led astray.

I will now, state to you my experience with the curculio. Being gardener for near 7 years, for Col. T. H. Perkins, Brookline, Mass., one of the best and most extensive private gardens in the country, I was, while there, indefatigable in my exertions to find out some method to exterminate the curculio, but without avail.

In the year 1848, I left that place, and went south and west. During all that time, the destruction of the curculio was my principal object. I was last summer gardener upon the place of Mr. Longworth, and I can with truth assert that there was not two dozen of sound

plums in his whole establishment for the year. Leaving west, I came to New-York, and obtained a situation with W. C. Langley, Esq., a patron and friend of horticulture, and a gentleman who has spared no expense in furnishing his establishment with the choicest fruits—the plum in particular. Here I again commenced my labors, and I am happy to say, with perfect success; and as mere assertion is worth little, I invite all unbelievers, as well as inquirers, to occular demonstration.

Mr. Langley has an extensive and beautiful plum orchard, and this year in particular, it was loaded with fruit, all the trees bearing about equally. For an experiment, I commenced the application with a quill, of a *new composition*, on *three* trees. The result is worthy of being seen. There is not a plum in the orchard, except on these three trees, they having fallen off, destroyed by the insect. To one of the three I shall be obliged to apply props, otherwise it will break down. I can only add, that I am convinced that my composition is a radical exterminator. I shall keep its nature private until practical men, and others interested, are satisfied. Mr. Langley's place will be open for the public to examine for themselves, after which my receipt shall be open to the world. The compound for 100 trees would not cost over eight dollars. It is applied with a syringe. I am sir, your humble servt., Wm. Quant, *Gardener to W. C. Langley, Esq., 3d Avenue. Long Island, July* 12, 1851.

Sweet Potatoe Culture.—Sir: The sweet potato forms a very important article of provision on the southern plantations. It is so subject to rot—even by the 1st of January—that it is much less planted than would otherwise be the case. There are various modes adopted to preserve them, yet none giving entire assurance. It has struck me that some way might be adopted of kiln-drying them. This would reduce them greatly in bulk, by ridding them of water—the principal cause of their decay. They would thus be brought to a state easily convertible into a flour.

This notion first suggested itself to me in the famine year, when a good deal of Indian corn was kiln-dried to stand a voyage to Ireland.

I do not think I exaggerate, when I consider it a matter of national importance, and upon this ground beg that you will turn it in your mind. Should you be at fault, a suggestion in your paper would bring out some of your correspondents upon the two points—

Is the scheme a practicable one? If so, what mode of preparation would best accomplish it?

I do not give my name—it would add nothing to the importance of the subject, nor ought it to do so.

I send this to your paper, as—taking it—I shall see anything you may say on the subject. *Charleston, S. C., June* 10, 1851.

We shall be glad to hear from correspondents who have information to communicate on this subject. Ed.

Peach Trees—The Effect of Shortening-in.—Last winter we tried the experiment of shortening-in the branches of a portion of a peach tree, and leaving the remainder untouched, in order more fully to test the beneficial effects of the practice, and give an occular demonstration of the difference, if any should appear, resulting from the operation, to all who might witness the result. The blossoms on the branches shortened-in, came out from a week to ten days earlier, and the fruit at the time of writing, is at least one-third larger than that on branches left in their natural state. The new growth of wood on the shortened branches is of a more vigorous and finer character, and will probably acquire a greater degree of hardiness, to enable it to withstand the vigor of the coming winter.

But this, too, is labor, and being so, it will be an objection with many to any further attempts to raise peaches. Yet it is a labor of pleasure, if not of profit, to all who wish to enjoy the satisfaction of seeing nature yielding to their control, and nature perfecting herself under their influence. To those who have pleasure of tasting rich fruit of their own raising, and plucking it in delicious freshness from the tree, it will be but a *light service*, compared with emptying their pockets to purchase the fruits of other climes, too often gathered in a crude and immature state, in order to enable them to survive transportation, and contracting insipidity and decay in every step of their journeying.

We might before have remarked, for the benefit of the inexperienced, (if any of your rea-

ders are more so than myself,) that in shortening we are sure to cut down to sound and vigorous wood, such as has not and will not winter-kill, and through which the sap will commence a healthy and vigorous growth in spring. Hence we take off rather more than the last growth of the season. If the work is delayed until February or March, we cut down to where the buds are healthful and strong. Y'rs truly, W. Bacon. *Richmond, Mass., July* 7, 1851.

A. J. Downing, Esq.—Dear Sir: I should not venture to address you, but for two encouragements, (very faint ones *to me*, to be sure, but still encouragements,) which I find in the pages of the Horticulturist. One of these is your promise to answer all questions of your subscribers, *if put in a brief form.* Alas for me then! but—I have a question to ask. The other is your invitation to "Horticulturists and Amateurs to contribute Essays, Papers, or Rough Notes of Experience." Now, I am too ignorant for a horticulturist, but if amateur means a lover of flowers, (roses especially) I am one, most certainly; and I must detail my experience, in order to ask my question.

Two years since, I came in possession of four roses; the Fellenberg, Louis Philippe, Queen of Naples, and Gloire de France. These I planted out on the north side of the house, in the only place which could then be spared for them. I was instructed to cut them all down to within a short distance of the ground, on the approach of cold weather, but they grew so beautifully during the summer, that when autumn came I could not bear the thought of cutting them down. I therefore, took up the Fellenberg, and covered the rest carefully with straw, and placed a box over them. When I uncovered them in the spring, I found that the Queen of Naples and Louis Phillippe had each sent a shoot from the root, some six inches in length, which, for want of air, had died and moulded. These were covered too early, and with too much straw; so I had learned something from experience. On close examination, I found that the Queen of Naples was entirely dead, the Louis Phillipe showed one bud close to the root, while the Gloire de France, more hardy than either, exhibited quite a healthy looking stem. I now removed them to a bed which had been prepared on the east side of the house, and added to them the Souvenir de Malmaison, White *Monthly* Moss Rose, (I have my doubts about its being a monthly,) Chromatella, and Gloire de Rosamene. The Louis Phillippe grew a few inches, then a careless boy snapped the top off with his whip-lash, and it never came up again. The Gloire de France gradually died down to the root, then sent up one small sickly sprout, which grew an inch, and then stopped. I dug away the earth from the roots, and filled in with chip dirt, watering it plentifully, and it soon began to grow. The Souvenir de Malmaison was killed about as soon as I had it, by a great black bug, which gnawed into the heart of the root. I resolved to cover the roots with tan-bark this winter, but as they make no more scruple of disappointing ladies in the west, (this part of it, at least,) than others, my tan-bark did not come to hand; so I twisted straw carefully about the the stems, and about the middle of our very mild winter, all except the Moss Rose were covered with boxes, so placed as to admit plenty of air. This spring I found my Moss Rose entirely uninjured,—my two Glories, (of France and Rosamene,) at once sent up strong shoots from the roots; but my Chromatella—no, that too, is alive! A very small tuft of leaves made their appearance three inches up the stem. But in a very few days, to my dismay, these leaves began to droop. In my alarm I took it up, (breaking several long strong roots in the operation,) but could discover nothing which should cause its death. A foot from where it stood, and within two inches of my Moss Rose, a very small *something* made its appearance when the leaves first began to droop, and growing with amazing rapidity, soon showed unmistable proofs of its origin. I had not, then, lost my Chromatella. It is now seven feet high, and still growing at the rate of an inch a day. Now, Mr. Downing, *must* I cut down this splendid plant? Is there no way to save it? It has not blossomed yet, and I fear it will not this year. And my others, too, growing and blossoming beautifully as they are, *must* they all come down? If you will give me some advice about them, you will confer a very, *very* great favor on *A Subscriber at the West. July* 7, 1851.

We shall be glad, if possible, to give our fair correspondent in Illinois some consolation

against the winter severity upon her roses, and for that purpose, must state the following.

Two things are very essential to enable a half hardy plant to stand the winter. The first is, that there shall be no sappy immature wood, and the second, that the entire plant, (root especially,) shall be kept dry in winter. To secure the first, the ends of the long shoots should be pinched off, to stop their further growth, about the middle of September. This will cause the shoots to harden and ripen. To secure the second point, the border or bed should have a good drainage—either natural or artificial. Afterwards, at the approach of winter, our correspondent will strip off any leaves remaining on the shoots of the rose, bind down the long branches, and cover the whole plant, including them, entirely over with dry tan-bark —say to the depth of a foot and a half above the surface of the ground if necessary, and finally lay boards over the hillock of tan in such a way as to shed all the storms of winter, we think she will find her roses quite uninjured when she uncovers them in the spring. Ed.

Notes on Richmond Park.—Will you permit me with the greatest respect, to correct what appears to be an error in one of your most interesting letters on the parks of London, which has been copied into several of the papers. It is regarding the spot where Henry the 8th is said to have waited, for the signal of Anne Boleyn's execution. I never before heard of its being in Richmond Park, although that version of the legend has, since I saw your letter, been repeated to me by two young Englishmen. I, who lived in London some thirty years, always understood it was in Epping Forest, much nearer the Tower than Richmond, at which last, I very much doubt whether the small guns of the period, could have been heard, unless under particular circumstances of the air and wind. The story however, although highly probable is not mentioned by Hollingshead, Hall or Fabyn, nor in Miss Strickland's life of Anne, all of which I have consulted. It is however given in one of the very useful pictorial folios published by C. Knight & Co., and also in that volume of the Edinburgh Cabinet Library wherein the life of Henry occurs, written by Patrick Fraser Tyler—no mean authority, although he gives it as a *tradition;* I beg leave to inclose the following extract from the work for your further information. "That Henry waited with unfeeling impatience for the death of Anne is certain; and a tradition is yet preserved in Epping Forest, which strikingly illustrates this fact. On the morning of the day which was to be her last, he went to hunt in that district, and as he breakfasted, surrounded by his train and his hounds, under a spreading oak which is still shown, he listened from time to time with a look of intense anxiety. At length the sound of a distant gun boomed through the wood. It was a preconcerted signal, and marked the moment when the execution was completed. 'Ah, ah! it is done,' said he, starting up, 'the business is done; uncouple the dogs and let us follow the sport.' On the succeeding morning he was married to Jane Seymour."—vide life of King Henry the eighth, by P. F. Tytler—Edin. 1837—p. 383, Edinburg Cabinet Library. I have my doubts whether Richmond Park ever was a hunting ground—but Epping Forest was, from the earliest records, and so continues to the present day, or *did*, until within a few years—and an annual hunt according to charter, was always given on Easter Monday to all citizens of London who chose to attend it. Your obd't. servt. Robert Balmanno. *N. Y., June* 27, 1851.

Prairie Rose—Mrs. Hovey.—I noticed, in a former number of the Horticulturist, that a doubt was expressed by one of its contributors whether this fine rose was ever white, as it has been represented. In our correction of this doubt we deemed it desirable to wait for the present blooming; we find some of our plants have borne flowers of the purest white, while others have at the same time produced flowers of a very pale blush. Our experiment also coincides with that of Joshua Pierce, of Washington, the originator of this variety. Under date of May 9, 1851, he writes us, "by reference to my first year's notice I find No. 41 (Mrs. Hovey,) marked *fine white;* again another year it is marked *very pale blush.*" It thus seems clear that this rose is somewhat inconstant, but by the right mode of cultivation can undoubtedly be produced uniformly white. The soil of Syracuse and western New-York is probably unpropitious. The facts respecting

this rose readily suggest the thought that it is inexpedient to pronounce wrong any description of a flower so variable as the rose, particularly when the difference is so slight as between white and very pale blush. The same remark may apply to many other flowers which being neither of a distinct genus or species but simply varieties or sports, are liable to great changes. S. B. P. *Flushing*, 7 *mo.* 16, 1851.

Albany and Rensselaer Hort. Society.—The first exhibition of this Society was held on the 25th and 26th of June. It had been appointed for the 18th and 19th of the month, but on account of the backwardness of the season, was postponed for a week. At the latter time there was a fine display of strawberries, a few samples of cherries, (the crop in general not being sufficiently matured to exhibit,) a fair show of early vegetables, and handsome collections of roses from two or three individuals. But in most departments, the competition was much more limited than usual. Of strawberries, Burr's New Pine was, as last year, deemed of the first quality. An extraordinary sample of Ross's Phœnix was presented by Mrs. C. P. Williams of this city. They measured, on the average, four and three-fourths inches in circumference. They grew on what was, a few years since, raw blue clay, but which has lately been made rich and mellow by manure. Dr. March offered some very handsome samples of the Black Tartarian cherry. A seedling cherry, offered by Mrs. E. C. Cobb, attracted much attention. It is of the May-duke character, perhaps somewhat earlier than that variety, large, and very pleasant. It is worthy of examination in future seasons. A seedling was also offered by Mr. B. B. Kirtland, which has been before exhibited, and deemed entitled to favorable notice. It is of fine flavor, and for several years has been very productive. It is a light colored cherry, ripening with the Black Tartarian.

The second exhibition was held on the 9th of July. The general display, though limited in comparison with some previous exhibitions, was respectable, and in some respects highly creditable. The time was several days too late for most kinds of cherries—the warm damp weather of the preceding week having swept off most of those which were fully ripe. There was still some fine specimens of Black Tartarian—especially those offered by Mr. Elisha Dorr, Albany, and Mr. E. C. Aiken, Greenbush. Handsome samples of several other choice kinds were offered by Messrs. Douw, Rathbone, Willson, Platte, and Mayell. Gooseberries of all the most noted kinds were exhibited, and they were generally in better perfection than for previous years. The specimens offered by Messrs. Douw, Wilson, John S. Goold, Mayell, Dorr, and others, were very fine. There were some excellent samples of raspberries—especially the Red Antwerp, Fastolff, and the Black and Yellow Ohio Everbearing, shown by John S. Goold. Mr. Goold also offered samples of four kinds of strawberries—the only ones offered. Knight's Sweet Currant, shown by James Wilson, was deemed, as it has been in several previous years, the best offered. The Cherry Currant is larger, but the bunches are shorter, and the fruit more acid. Several handsome specimens of the Christiana Melon, well ripened, were offered at this and the former exhibition, by Messrs. Douw and Rathbone. There was a good display of vegetables, embracing potatoes, cauliflowers, cabbages, beets, onions, beans, peas, &c., from the gardens of Messrs. Douw, Rathbone, Passenger, Mayell, and Newcomb. Very handsome collections of flowers were shown by Messrs. Douw, Rathbone, Menand, Wilson, Newcomb, Jaynes, J. S. Goold, Mayell, Dorr, and others.

Pennsylvania Horticultural Society.—The stated meeting of this society, for the month of July was held in the Chinese Saloon Philadelphia, on the evening of the 15th. The president in the chair.

The display on the occasion was unusually fine, the most attractive part of which was the luscious fruit, which consisted of grapes from the President's houses, composed of seven dishes. The finest varieties were the Muscat of Alexandria, White Sweet Water and St. Peter—some ten dishes of Apricots, the finest of which were the Royal, Moorpark and Peche varieties from the garden of Mrs. J. B. Smith, the Moorpark from the grounds of Wm. V. Pettit, James Dundas, Robert Johnson and Isaac B. Baxter. Plums of the Mirabelle variety from Wm. Foster and Alex. Parker. Pears from A. M. Eastwick's, the Jargonelle

and Little Muscat; Early Catherine, etc. from Miss Gratz's; Nectarines two varieties from John Lambert's; very large Gooseberries from Mrs. J. B. Smith and Isaac B. Baxter. Figs from Wm. Johns. Apples, the Red Juneating from A. M. Eastwick's. Ten varieties of seedling Raspberries by our indefatigable member Dr. W. D. Brinckle. Currants—fine red and white from Miss Gratz's; red, from Mrs. N. W. Roe, and black from John Lambert's gardens. A specimen of the Colong cherry from Jno. R. Brinckle—an interesting dwarf variety indigenous to the Rocky mountains.

The collections of plants in pots from Robert Buist's, John Lambert's John Sherwood's, A. M. Eastwick's gardens contained many specimens of interest. Among Mr. Sherwood's were a dozen different varieties of that graceful genus the Fuchsia. A table by Edward Delevan, gardener, contained twelve varieties of Achimenes, a number of which were entirely new and beautiful. Seedling Carnations by Matthew Mills and Joseph Mevius. Beautiful bouquets and a basket formed of indigenous flowers by Robert Kilvington; basket of exotic flowers by H. A. Dreer, hand bouquets by Jno. Gallagher and others.

The three tables of vegetables by Thomas Wrigaines' gardener, by Miss Gratz's and John Lambert's, did them credit.

A specimen of wheat some seven feet in height, from Col. Holman's farm, Chester Co., was shown, and considered so prolific that the crop was estimated at 50 bushels to the acre. Tho. P. James, Rec. Sec.

Oswego Hort. Society.—As Secretary of the Oswego Horticultural Society, I am requested to give you some account of our doings. At the annual meeting in January last, the following officers were chosen for the ensuing year.

President—A. P. Grant.

Vice Presidents—P. S. Slocum, C. S. Phelps, S. Worden, W. Newkirk, and C. Trowbridge.

Cor. Secretary—J. W. P. Allen.

Rec. Secretary—J. M. Casey.

Librarian—C. Severance.

Treasurer—S. H. Lathrop.

Executive Committee—G. W. Burt, J. L. McWhorter, G. Mollison, Geo. Seeley, J. W. Judson.

The Ex. Committee have prepared a list of premiums, for the year, on a pretty liberal scale, amounting to $200 and upwards. Three exhibitions are proposed to be given: the first was held on the 2d inst., at the City Hall. A report of the proceedings is enclosed. The exhibition room was very appropriately decorated under the supervision of a committee of ladies. The display of flowers was very fine, and evinced much taste and skill, not only in the culture of rare kinds, but in their arrangement on the exhibition tables. For particulars, see the report of the committee on that subject which is enclosed. The show of fruits was very creditable, especially of strawberries which were in great perfection, and all the choice varieties were on the table. I very much regret that the report does not give the names of all the varieties, and further, that the committee on fruits, in the discharge of their duty, have not named a single sort for which a premium was awarded. Of those which came under my observation, Hovey's seedling and Methven's scarlet were the finest *looking*;—not having tasted, I am unable to speak of their *flavor*, but should consider them well worthy a premium. There were also some choice Alpines and Hautbois.

The season was not sufficiently advanced for our best cherries,—the only kinds in perfection being the Mayduke, Elton and American Heart. A premium for the best cherry (the Elton) was awarded to Mr. Barnard, and deservedly too. Mr. Worden had as usual a large collection of the best sorts,—among them the Elton, American Heart, Black Tartarian and Downton. Mrs. L. B. Crocker presented the Napoleon Bigarreau, Graffion and other fine varieties.

At the close of the exhibition the articles were sold. The society numbers about 250 members whose contributions, added to the proceeds of the fairs amount to a very respectable sum, which is disbursed in premiums and books, thus encouraging competition, diffusing knowledge, and promoting a taste for horticultural pursuits.

Our next exhibition is to be held in September, when our peaches and pears will be in season—the crop of which promises to be very abundant. Many of the orchards planted within the last five or six years begin to yield a re-

turn to the proprietor for his outlay of money and time. The city and town of Oswego must, this year, have a very large surplus of the finest apples for export; and of peaches, a sufficiency to meet the home demand. There is a prospect too, that the demand for choice pears will be measurably supplied. I notice in many places, arrangements for the culture of the Isabella and Catawba grape, on a pretty extensive scale—and the crop must be a large one. I trust our citizens will not neglect the cultivation of these varieties, yielding, as they do, liberal and sure returns for a small amount of labor and space. Yours, &c. J. M. Casey, Rec. Sec. Oswego Hort. Society.

The Berkshire Hort. Society held its first meeting for the exhibition of fruits and flowers, at Lee, on the 3d of July. Present E. Williams, Esq., Vice-President, in the chair.

The exhibition of flowers surpassed that of any former period, for the corresponding months, and the display of fruit, though limited to strawberries, (cherries, in consequence of the lateness of the season, not being in maturity,) was enough to tempt any one to exclaim in favor of their cultivation.

The first premium on strawberries was given to William G. Backus, of Pittsfield, $2; and the second to Edward Pomeroy, of Pittsfield, $1. Mrs. Hon. Wm. Porter, of Lee, exhibited more than 30 varieties of the Rose, beautifully arranged in tasteful pyramids. These roses were roses, none of your half formed, stinted productions, such as are too often seen among the grass and weed plots of those who "don't care nothin about flowers! 'taint no profit to raise em." In form, they were nearly perfect; in shade, rich; in variety, forming agreeable contrasts. Mrs. Porter received the first premium, $1. Mrs. G. W. Platner, of Lee, a large and rich variety, 2d premium, Breck's Book of Flowers. Mrs. Sarah L. Clark, of Richmond, 3d premium, Bridgeman's Florist's Guide. The first premium on Perpetual Roses, to Edward Pomeroy, Pittsfield, $1. Second premium to Mrs. Curtis, of Stockbridge, Breck's Book of flowers.

On cut flowers, to Mrs. Chamberlain, of Lee, $1. Mrs. George Hull, of Sandisfield, Breck's Book of Flowers. Mrs. Adams of Stockbridge, Bridgman's Florist's Guide. A spirited and talented address was given by Hon. H. W. Bishop, of Lenox.

The next exhibition will be held at Pittsfield, on the first Wednesday of August. W. Bacon, Secretary. *Richmond, July* 7, 1851.

Mass. Hort. Society.—At the meeting of July 12th, the following fruits were exhibited.

Fruits. From James Hyde & Son, Cherries—probably Bigarreau Noir.

From Marshall P. Wilder, Cherries—Seedling, Bigarreau Noir tardiff, Bigarreau Noir, Downer's Late Red, superior.

From Winship & Co., Cherries—Bigarreau Noir, (?) Downers Late Red.

From Jonathan Mann, Cherries—unnamed, probably Elkhorn; Raspberries.

From Cheever Newhall, Raspberries—Knevet's Giant.

From Azell Bowditch, Raspberries—Knevet's Giant; Grapes—Black Hamburgh, and Black St. Peters.

From Samuel Sweetzer, Raspberries—Knevet's Giant.

From J. W. Foster, Raspberries—Knevet's Giant, fine.

From Breck & Co., Grapes—Black Hamburgh, fine; White Chasselas.

From Messrs. Hyde, Cherries—Hyde's New black seedling.

From E. C. Grant, Strawberries—Newland's Alpine and Monthly Alpine; Raspberries—Knevet's Giant.

From H. B. Stanwood, Cherries—Downer's Late Led, very fine.

From Otis Johnson, Cherries—Sweet Montmorenci, Florence, Black Eagle, superior; Napoleon Bigarreau, fine, and seedling.

From George Walsh, Cherries—Seedling No. 1, 2 and 3, fine.

From J. F. Allen, Grapes—Garden Tokay and Black Hamburgh; White Hamburgh, very fine; Cannon Hall, superior; White Frongtignan, very fine. Peaches—Late Crawford, extra size, superior; Tippecanoe, New-Jersey, Gros. Mignonne, Old Mixon. Nectarines—Violet Hatif, and Boston.

From J. P. Cushing, Esq., Grapes—Black Hamburgh, very fine; Syrian Bunch, extra size; Muscat of Alexandria, very fine; White Frontignan, superior. Melons—Beachwood and Persian, both very fine.

From William Batchelder, Cherries—Downer's Late Red?

From Galen Merriam, Cherries—Downer's Late Red? very fine.

From Josiah Lovett, 2d, Cherries, Spachaus, Honey Hearts. Raspberries—Knevet's Giant, superior.

From Henry Vandine, Cherries—Elkhorn, very fine.

From Hovey & Co., Figs, Black Fig of St. Michaels. Cherries—Black Eagle, very fine; seedling; Monstreuse de Bavay, and one un-

named. Grapes—Gros Bleu; Victoria, very fine, and Muscat of Alexandria.

From J. S. Sleeper, Cherries—Seedling.

For the committee. J. S. CABOT, Ch'n.

SCHOOL OF DESIGN, FOR WOMEN.—While there is so much of mere speculation about the "rights" of the sexes, it is gratifying to find now and then, something actually done in the right direction. From the following account, by Mrs. BATEHAM, the School of Design established for women, in Philadelphia, seems to us to have more value in it than a dozen conventions. Give the women of America who have talent and industry, an interesting and intellectual occupation, and we shall find the *wrongs* rapidly dipappearing. In the instinctive faculty of taste, many women are largely gifted, and such schools of design as this would not only give employment to thousands—but elevate and refine their whole social life. ED.

Philadelphia School of Design for Women.—This truly benevolent institution is a branch of the "Franklin Institute for the promotion of the Mechanic Arts," at Philadelphia, and its design is to furnish woman another source of maintenance by preparing her to enter upon the lucrative business of engraving, designing, &c. It was commenced in November, 1848, by Mrs. PETER, whose benevolent heart had been pained for years, by seeing so large and increasing a number of deserving women, exposed to deprivation and suffering, for want of a wider scope in which to exercise their abilities for the maintenance of themselves and their children. After long deliberation, she selected this department of industry, not only because it presents a wide and almost unoccupied field in our country, but because these arts can be practiced *at home*, without materially interfering with the routine of domestic duty.

For two years she taught private classes in her own dwelling, and being greatly encouraged by her success, in March, 1850, she presented the cause to the managers of the Franklin Institute, who reported favorably, and it was taken under their patronage.

The committee on instruction having had referred to it, by the Board of Managers, the project of Mrs. PETER for the establishment of a School of Design for women, reported as follows:

It cannot be a matter of doubt even to the most careless observer among us, that there is, in our city, a great want of ways in which female industry may be profitably employed; and that this evil is increasing is evident from the yearly accession to the demands upon our public and private charities for the support of women and their families, who apply for such relief with the greatest reluctance, and would cheerfully earn for themselves if the means of profitably employing their labor were counted out to them. In the severe commercial crises which affect our country from time to time, many families are suddenly reduced from comfort and even affluence to poverty, and the evil alluded to is much increased since no small share of this suffering falls upon widows and single women.

The person, therefore, who points out a new field for the employment of female industry, must be looked upon as a public benefactor; and any mode by which such a field may be rendered accessible to necessitous women, recommends itself strongly to society as a powerful agent in the advancement of our civilization, and the relief of suffering.

It is, however, very desirable that whatever mode may be devised for the employment of female industry, should be of such a nature as to allow it to be exercised at their own homes, or at least without crowding them together in work-shops; and especially without forcing them into contact with the opposite sex—practices which are too frequently destructive to female delicacy, (a quality not less valuable to the community than beautiful in itself) even when they do not lead to habits of actual immorality.

Now, one of the distinguishing peculiarities of the female sex, whether it be an intrinsic difference in their intellectual nature from that of man, or only the result of a difference of education, and a habit of close observation, is the very general possession by them of a more refined and correct taste, and a power of delicate discrimination, especially in regard to the effects of form and color—effects which strike almost every one among us, but which few, except women, are able to analyze and produce at will. Heretofore little, if any attention has been paid to the cultivation of this peculiar faculty; and even in our most elaborate systems of female instruction, it appears to be considered as very subordinate in importance to other branches less fitted to the peculiar capacities of their minds.

On the other hand, amidst the very rapid advances which we have made in manufacturing, it must be admitted that our improvement in the arts of design has been by no means commensurate with other successes; and, while the quality of our materials, and the cheapness of their production are enabling us gradually to exclude foreign productions from our market, we are still compelled to depend almost entirely upon foreigners for our designs and patterns; thus exhibiting ourselves rather in the light of successful imitators of others, than as original inventors. Thus the designs of our articles of furniture, and the patterns of our dresses and other stuffs, are rarely anything more than servile imitations of those imported from France and England, which the different habits of life among us, as well as the different climate of our country, render more or less inappropriate to our use, while the ex-

istence of this state of things must necessarily render us tributary, and in so far inferior to foreign nations.

This is another matter well worthy of the attention of our community; and if, by any means, we shall succeed in freeing our manufacturing industry from this slavery, which is a defect and reproach upon it, we shall certainly have made another important step forward in our career as a producing nation.

The plan which has been submitted to the Institute, and upon which the committee is called to report, appears calculated to diminish or destroy both these great evils, by providing a school in which young women may receive a competent education in the arts of design, and their various applications to manufactures, thus furnishishing them with a heretofore unoccupied branch of industry, for which by their very natures, they are peculiarly fitted, and by which they may sustain themselves by their own labor, while at the same time they give to our other arts that stamp of originality and nationality in which they are now in so great a degree deficient.

The successful establishment of such a school would, moreover, fit them for employment in many arts, such as woodcutting and engraving, for which their quick perceptions of form, and their delicacy of hand very especially fit them; while even should they, in these and similar branches of labor, finally supplant men entirely, no evil could occur, especially in a country like ours, where such broad fields for male labor, lie entirely unoccupied.

Your committee therefore think that the project is deserving of the warmest approbation of the Franklin Institute, and respectfully recommend the Board of Managers to adopt the following resolutions:

Resolved, That the project submitted by Mrs. Peter for the establishment of a school of design for women, as tending to furnish women with a large field for the exercise of their talents and industry, and to increase their usefulness to society, is, in the opinion of the Franklin Institute, worthy of the highest commendation, and if successfully carried out, cannot but be of great value to the community.

By order of the Com. J. F. Frazer, Ch'n.

May 15, 1850.

The school has now been in successful operation about a year, and the present number of pupils is about 65. Mrs. Anne Still, the head teacher, is quite enthusiastic in her devotion to the cause, and is admirably adapted to fill the post she does, if we may judge from the handiwork of her pupils.

The pupils are principally engaged in devising and sketching patterns or designs for calicos, delains, oil-cloths, carpets, wall paper, table covers, hearth rugs, &c., though a large number are engaged in wood engraving, for magazines, and cuts representing machinery, &c., in sculpture, and indeed in designing, coloring or staining, painting, enameling, burnishing or carving household goods and utensils of every description, mouldings and carvings, and nearly every article of use or ornament. The terms of admission are talent and skill suitable to some of the departments of labor, a determination to make the knowledge here obtained, *useful* to themselves or others, and a small tuition fee of $4 per quarter, or if unable to pay this, simply an entrance fee of $2.

As soon as the knowledge of drawing is acquired, the pupil, if skillful, can commence to earn rapidly, while at the same time improving herself. The occupation is so light and delicate, and so lucrative, that with skill, a young woman can seldom, if ever, do so well for herself in any other way. We are rejoiced to see such a school opened and sustained, for it will accomplish much for women, and we hope a very few years more will find such an institution in our own state. But I have neither time nor room remaining to speak now of the Female Medical College, so it must be for another No.

Answers to Correspondents.

Stocks for Roses.—*J. S. D.*,(Elkton, Ky.) The most experienced cultivators look upon the Manettii Rose stock, as the best of all stocks for perpetual Roses. It not only grows readily from cuttings, takes to bud easily, and very seldom throws out a sucker, but being allied to the China Rose, it promotes the free blooming of Perpetuals worked upon it. The stock generally used for standard roses is the sweet brier, native to the road sides. We do not know what species of oxalis you refer to, but they all require a rich sandy soil, and plenty of sun light, if you wish them to bloom freely.

Raspberries.—*An Amateur*, (Brooklyn, N. Y.) The best way to raise seedlings of the raspberry, is the following: Wash the seeds free from the pulp as soon as the berries are perfectly ripe. Take one or more wooden boxes, constructed about 6 inches deep, 2 feet wide and 3 feet long: fill them with rich sandy loam, to within an inch of the top. Sow the seeds in the soil about a fourth of an inch deep, pressing the mould down firmly, and watering it after sowing the seeds. The boxes should then be placed in a shady situation, on the north side of a fence or building—plunged up to the rims in tan-bark or coal-ashes, and watered regularly every evening, so long as the dry weather continues. When the winter sets in, cover them two inches deep with leaves. Uncover them in spring. The seeds will come up in April, and when the plants are two inches

high, transplant them, (during wet weather,) into a favorable place in the garden. You may succeed in making the seeds vegetate by planting them in the open garden—but you will not probably, get half the number in this way that you will with the boxes. The strawberry may be treated in the same manner.

Tyro, (New London, Ct.) The rose leaves which you have sent us, and of which only the skeleton remains, (the covering of the leaf having been entirely eaten up,) have been devoured by the *rose slug*. If you wish to get rid of this pest, which as you say destroys all the beauty of the queen of garden flowers, you must commence next year, early in the season —as soon as the rose buds begins to show the first faint signs of the color of the flower, and syringe the foliage on the under side, with tobacco water. This, repeated two or three times, at intervals of four or five days, will effectually destroy the rose slug while it is in the state of a small green fly.

Hot water Apparatus.—*W. Field.* We recommend you to apply to Hogg & Benton, engineers, 136 Crosby street, New-York. They devote their attention especially to heating green-houses and buildings in this way, and can ensure you the best and latest improvements.

Cedar of Lebanon.—*M. Martin.* The largest sized plants that we have heard of for sale are at Hancock's nursery, Burlington, N. J. A deep sandy loam suits this tree best.

Chrysanthemums.—*A Lady*, (Pittsburgh.) You may have nice dwarf plants of these by bending down the long shoots of the old stock plants, and fastening them to the ground with *pegs* at a distance of 4 or 5 inches from the end of the shoot. In a few days this end of the shoot will again take an upright position. Then sink a flower pot filled with rich mould under the bend of the shoot and make a layer of it. It will soon send out plenty of roots into the pot —after which you can cut off the connection with the mother plant, and your young plant will bloom finely at about a foot high.

Wintering bedding out Plants.—*A. W. M.*, (New-Bedford.) You fail in wintering Verbenas in your cool green-house mainly because your plants are so young that they damp off Cuttings of Verbenas, Scarlet Geraniums, &c., should be made *now*, as speedily as possible, so that they may form abundant roots, and the plants become strong with well ripened shoots before winter. The same remarks apply to Maurandias, Cobeas and other half hardy climbers.

Apricot trees.—*B. Johnson*, (New-York.) The cracking disease of the trunk and decline of your trees is owing to their having suffered in the bark from the great alternations of temperature in winter. Wind the stems of your sound trees about with straw ropes and you will avoid the same result in them.

Carnations.—*B. J.* In order that the layers should root freely, you must water the ground every morning in dry weather—and if you can cover it with moss or short grass as a mulcher it will promote greatly the formation of roots.

Peach trees.—*Junius*, (Princeton, N. J.) From the account you give of the difficulty of raising good peaches in your soil as compared with twenty years ago we should say your soil is exhausted of the proper food for the tree, to restore it prepare large holes for a new plantation of peach trees, by trenching the soil two feet deep and mixing with it a heavy dressing of leached wood ashes and stable manure. If we were to add another hint it would be to send to a distance and get a new stock of the best varieties.

Drawing Plants.—*A Young Gardener*, (Charleston, S. C.) The best possible way for you to learn drawing "by yourself," is to procure "Chapman's Drawing Book," which may be had, no doubt, in Charleston, or at any rate ordered through any bookseller there, as it is published in New-York. This work is accompanied by a copy-drawing book, in which all the needful elementary practice is put before the beginner in the most comprehensible form.

Climbers.—*A. P.*, (Northampton, Mass.) The difference between the Virginia Creeper, (or *Ampilopsis*,) a harmless plant, and the poi son sumac, or Mercury vine, (*Rhus toxicodendron*,) which somewhat resemble each other, as you, say, is, that the former has five leaflets in a cluster, and the latter only three. They both cling to stone-walls by the little rootlets sent out from the stem.

Study of Trees in Park Scenery.

THE

Horticulturist,

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

The National Ignorance of the Agricultural Interest.

TO general observers, the prosperity of the United States in the great interests of trade, commerce, manufactures, and agriculture, is a matter of every-day remark, and general assent. The country extends itself from one zone to another, and from one ocean to another. New states are settled, our own population increases, emigration pours its vast tide upon our shores, new soils give abundant harvests, new settlements create a demand for the necessaries and luxuries of life provided by the older cities, and the nation exhibits at every census, so unparalleled a growth, and such magnificent resources, that common sense is startled, and only the imagination can keep pace with the probable destines of the one hundred millions of Americans that will speak one language, and, we trust, be governed by one constitution, half a century hence.

As a wise man, who finds his family increasing after the manner of the ancient patriarchs', looks about him somewhat anxiously, to find out if there is likely to be bread enough for their subsistence, so wise statesmen, looking at this extraordinary growth of population, and this prospective wealth of the country, will inquire, narrowly, into its productive powers. He will desire to know whether the national domain is so managed that it will be likely to support the great people that will be ready to live upon it in the next century. He will seek to look into the present and the future sufficiently to ascertain whether our rapid growth and material abundance, do not arise almost as much from the migratory habits of our people, and the constant taking-up of rich prairies, yielding their virgin harvests of breadstuffs, as from the institutions peculiar to our favored country.

We regret to say, that it does not require much scrutiny on the part of a serious inquirer, to discover that we are in some respects like a large and increasing family, running over and devouring a great estate to which they have fallen heirs, with little

or no care to preserve or maintain it, rather than a wise and prudent one, seeking to maintain that estate in its best and most productive condition.

To be sure, our trade and commerce are pursued with a thrift and sagacity likely to add largely to our substantial wealth, and to develop the collateral resources of the country. But, after all, trade and commerce are not the great interests of the country. That interest is, as every one admits, agriculture. By the latter, the great bulk of the people live, and by it all are fed. It is clear, therefore, if that interest is neglected or misunderstood, the population of the country may steadily increase, but the means of supporting that population, (which can never be largely a manufacturing population,) must necessarily lessen, proportionately, every year.

Now, there are two undeniable facts at present staring us Americans in the face—amid all this prosperity: the first is, that the productive power of nearly all the land in the United States which has been ten years in cultivation, is fearfully lessening every season, from the desolating effects of a ruinous system of husbandry; and the second, is, that in consequence of this, the rural population of the older states is either at a stand still, or it is falling off, or it increases very slowly in proportion to the population of those cities and towns largely engaged in commercial pursuits.

Our census returns show, for instance, that in some of the states, (such as Rhode Island, Connecticut, Delaware and Maryland,) the only increase of population is in the *towns*—for in the rural population there is no growth at all. In the great agricultural state of New-York, the gain in the fourteen largest towns is sixty-four per cent, while in the rest of the state it is but nineteen per cent. In Pennsylvania, thirty-nine and a quarter per cent in the large towns, and but twenty-one per cent in the rural districts. The politicians in this state, finding themselves losing a representative in the new ratio, while Pennsylvania gains two, have, in alarm, actually deigned to inquire into the growth of the agricultural class, with some little attention. They have not generally arrived at the truth, however, which is, that Pennsylvania is, as a state, much better farmed than New-York, and hence the agricultural population increases much faster.

It is a painful truth, that both the press and the more active minds of the country at large, are strikingly ignorant of the condition of agriculture in all the older states, and one no less painful, that the farmers, who are not ignorant of it, are as a body, not intelligent enough to know how to remedy the evil.

"And what is that evil?" many of our readers will doubtless inquire. We answer, the miserable system of farming steadily pursued by eight-tenths of all the farmers of this country, since its first settlement: a system which proceeds upon the principle of taking as many crops from the land with as little manure as possible—until its productive powers are exhausted, and then —— emigrating to some part of the country where they can apply the same practice to a new soil. It requires far less knowledge and capital to wear out one good soil and abandon it for another, than to cultivate a good soil so as to maintain its productive powers from year to year, unimpaired. Accordingly, the emigration is always "to THE WEST." There, is ever the Arcadia of the American farmer; there are the acres which need but to be broken up by the plough,

to yield their thirty or forty bushels of wheat to the acre. Hence, the ever full tide of farmers or farmers sons, always sets westward, and the lands at home are left in a comparatively exhausted and barren state, and hence, too, the slow progress of farming as an honest art, where every body practices it is like a highway robber.

There are, doubtless, many superficial thinkers, who consider these western soils *exhaustless*—"prairies where crop after crop can be taken, by generation after generation." There was never a greater fallacy. There are acres and acres of land in the counties bordering the Hudson—such counties as Dutchess and Albany—from which the early settlers reaped their thirty to forty bushels of wheat to the acre, as easily as their great grand-children do now in the most fertile fields of the valley of the the Mississippi. Yet these very acres now yield only twelve or fourteen bushels each, and the average yield of the county of Dutchess—one of the most fertile and best managed on the Hudson, is at the present moment only six bushels of wheat to the acre! One of our cleverest agricultural writers has made the estimate, that of the twelve millions of acres of cultivated land in the state of New-York, eight millions are in the hands of the "skinners," who take away everything from the soil, and put nothing back; three millions in the hands of farmers who manage them so as to make the lands barely hold their own, while only one million of acres are well farmed, so as to maintain a high and productive state of fertility. And as New-York is confessedly one of the most substantial of all the older states, in point of agriculture, this estimate is too flattering to be applied to the older states. Even Ohio—newly settled as she is, begins to fall off per acre, in her annual wheat crop, and before fifty years will, if the present system continues, be considered a worn out soil.

The evil at the bottom of all this false system of husbandry, is no mystery. A rich soil contains only a given quantity of vegetable and mineral food for plants. Every crop grown upon a fertile soil, takes from it a certain amount of these substances, so essential to the growth of another crop. If these crops, like most of our grain crops, are sent away and consumed in other counties, or other parts of the counties—as in the great cities, and *none of their essential elements* in the way of vegetable matter, lime, potash, &c., *restored to the soil*, it follows as a matter of course, that eventually the soil *must* become barren, or miserably unprofitable. And such is, unfortunately, the fact. Instead of maintaining as many animals as possible upon the farm, and carefully restoring to the soil in the shape of animal and mineral manure, all those elements needful to the growth of future vegetables, our farmers send nearly all their crops for sale in cities—and allow all the valuable animal and mineral products of these crops to go to waste in those cities.*

"Oh! but," the farmer upon worn out land will say, "we cannot *afford* to pay for all the labor necessary for the high farming you advocate." Are you quite sure of that assertion? We suspect if you were to enter carefully into the calculation, as your neighbor, the merchant, enters into the calculation of his profit and loss in his system of trade, you would find that the difference in value between one crop of 12 bushels and

* In Belgium—the most productive country in the world, the urinary excrements of each cow are sold for $10 a year and are regularly applied to the land, and poudrette is valued as gold itself.

another of 30 bushels of wheat to the acre, would leave a handsome profit to that farmer who would pursue with method and energy, the practice of never taking an atom of food for plants from the soil in the shape of a crop, without, in some natural way, replacing it again. For, it must be rememembered, that needful as the soil is, every plant gathers a large part of its food from the air, and the excrement of animals fed upon crops, will restore to the soil all the needful elements taken from it by those crops.

The principle has been demonstrated over and over again, but the difficulty is to get farmers to *believe* it. Because they can get crops, such as they are, from a given soil, year after year, without manure, they think it is only necessary for them to *plant*—Providence will take care af the harvest. But it is in the pursuit of this very system, that vast plains of the old world, once as fertile as Michigan or Ohio, have become desert wastes, and it is perfectly certain, that when we reach the goal of an hundred millions of people, we shall reach a famine soon afterwards, if some new and more enlightened system of agriculture than our national "skinning" system, does not beforehand spring up and extend itself over the country.

And such a system can only be extensively disseminated and put into practice by raising the *intelligence* of farmers generally. We have, in common with the Agricultural Journals, again and again pointed out that this is mainly to be hoped for through a *practical* agricultural education. And yet the legislatures of our great agricultural states vote down, year after year, every bill reported by the friends of agriculture to establish such schools. Not one such school, efficient and useful as it might be, if started with sufficient aid from the state, exists in a nation of more than twenty millions of farmers. "What matters it," say the wise men of our state legislatures, "if the lands of the Atlantic states are worn out by bad farming? Is not the GREAT WEST the granary of the world?" And so they build canals and railroads, and bring from the west millions of bushels of grain, and send not one fertilizing atom back to restore the lands. And in this way we shall by-and-bye make the fertile prairies as barren as some of the worn out farms of Virginia. And thus "the sins of the fathers are visited upon the children, even to the fourth generation!"

NOTES ON THE HABITS OF THE CURCULIO.

BY J VAN BUREN, CLARKSVILLE, GA.

MR. DOWNING—For the last six or eight years I have been endeavoring to cultivate plums and nectarines, amongst other fruits; but from the depredations of that pest, the curculio, I have never yet had the satisfaction to have one ripen. On the opening of the present season, I determined to ascertain more of the history, habits, and if possible, some better remedy for the evil than was yet known. If the results of the numerous experiments I have run "the Turk" through, will be of any service to the readers of the Horticulturist, they are at your service.

DESCRIPTION OF THE DRAWINGS.

Fig. 1.

Fig. 1.—Common Curculio Magnified.

Fig. 2

Fig. 2.—Pupa Magnified.

Fig. 2. Pupa in the progress of transformation, showing the incipient wings, wing covers, legs and mandibles turned under the throat.

Fig. 3. Head and mandibles as used in biting the fruit to deposit the ova, showing the mandibles open.

Fig. 4. Curculio of the natural size.

Fig. 3.

Fig. 4.

In the first place, I filled a glass tumbler about half full of earth; on this I placed one nectarine and two Chickasaw plums, which had been bitten by the curculio, and tied a piece of paper over the top closely. The plums and nectarine decayed or rotted in the course of a few days, when the larvæ left them, and were seen moving about on the top of the earth for a few hours, and then disappeared. The next day, on examination, I found them deposited at the bottom of the tumbler, where they had excavated a small cavity in the earth about the size of a pea. In this situation I watched them from day to day, by looking through the bottom of the tumbler, where I could perceive them wriggling about. In about thirty days they began to disappear, and in a day or two after I opened the tumbler, and turned out the earth on a paper, and picked up thirteen lively curculios! Some of them had assumed the perfect size and color of those found upon the trees, whilst some others, of a more recent date or change, were of a reddish or mahogany color—whilst one of them was in a state or process of change, from a larvæ to a perfect curculio. Enclosed, I send you some of them in their three different stages, also some magnified drawings taken at the time. I immediately had a hole dug beneath a plum tree in the orchard, and at the depth of about a foot, found his excellency alive, and in fine condition for continuing his depredations.

I was somewhat surprised at the manner of transformation from the larvæ to the perfect insect. I had expected it to first have entered the pupa state, but such is not the case, as you will perceive on examining specimen No. 3, if it reaches you in good order. The legs, wings, and probocis, or more properly mandibles, appear to grow out from the larvæ, while the body contracts to the size of the perfect insect, no skin or shell is formed or cast off in the course of the change. I trust this experiment will satisfy all as to the manner of its propagation, as well as to the time.

On enclosing the before mentioned fruits, I did not count the number of punctures on them, so as to ascertain how many eggs had been deposited in each puncture; and that you may form an opinion of their numbers and industry here, I will observe that I have seen nectarines scarified in at least fifty places on one nectarine. This, in connection with the fact, that probably several broods or generations are propagated in every season, will give you an idea of their rapid increase, and consequent ravages. I shall preserve some of the insects during the coming winter, by placing them in earth in bottles, and ascertain whether any further changes take place, either as to size or habits.

I will now proceed with a history of my experimental remedies, but will remark at the

outset that I am *hors du combat* in all. I have made no impression, whatever, upon the grand rascal. I commenced my operations in the spring, by mixing pulverised cobalt in honey and water, and hanging it in cups in the trees, and by spreading some of it on the branches, and sometimes on the fruit, and I cannot say that I ever caught three curculios in all my cups, nor that one ever tasted that I spread upon the trunk or limbs. But I can say, if I did not kill the curculios, I killed all the trees upon which I put it to any extent, so *they* will not be tormented any more. I next put a ring of tar and grease around the trunks of some others, so as to stick them fast if they attempted to crawl up the trunk. Never did one put his foot in it, that I could discover. Next I caught some of them on a cloth, by shaking the trees, and placed them in bottles, and fed them on green plums, some dipped in a decoction of tobacco, some in that of elder-bark and leaves, others in penny-royal, and so on—all which they ate with a relish, as well as deposited their eggs in them.

In short, everything that I have tried has failed to arrest them in their wickededness, except shaking them from the trees, which is rather a *chinquapin business*, as we say out here. I have a fine nectarine tree standing near the kitchen door, under which the little niggers play and dance from morning till night, but not one nectarine has ever ripened upon it yet, nor do I think ever will, until some other remedy than those now known, is found. The only reason why trees growing over brick walks, and near doors, have succeeded at times, is from the fact that the insect is very shy. I have caught them in the act of puncturing the fruit, and on endeavoring to pick them off, they would roll themselves up and drop off like a 'possum.

All that promises to be of any service, that I am able to conceive of, is to destroy the young fruit as fast as it falls from the trees; and that is a forlorn hope here, where peach trees grow almost indigenously. The fruit should be gathered up and destroyed at least once every day, as the larvæ soon leaves it after it falls to the ground. Keeping poultry amongst the trees does no good, as the worm, immediately on leaving the fruit, crawls underneath it, and there burrows in the earth. [But the poultry "makes a business" of devouring the insect the moment it emerges, and therefore, where there are plenty of chickens—there are plenty of plums. Ed.] Hogs will doubtless be of much service, if permitted to run amongst the trees, but the fruit that first falls is so small that much of it is not eaten by them, and besides, some of the plums do not fall at all—but on the larvæ leaving them, dry up and remain upon the tree during the entire season. We encourage and protect the birds all we can about the orchard, (the Jay excepted,) who charges so much for his services that we cannot afford to tolerate him, for when our grapes ripen he claims the whole; so you will perceive all is failure thus far with your humble servant. I have thought it best to give you a history of all my failures, that others may not travel over the same ground, and trust that they will do the same with theirs; and I have no doubt but that perseverance will yet discover a remedy or specific cure for this pest.

We have two other varieties of this insect here, which I intended to have sent you, but they have accidentally escaped. One is quite small, and the other three or four times the size of the common kind. Should I be able to get hold of either of them again this season, I will send them.

J. Van Buren.

Clarksville, Ga., July 15, 1851.

Review.

"NOTES ON NORTH AMERICA, *Agricultural, Economical and Social*," by PROFESSOR JOHNSTON. Edinburgh and London, 1851.

IT has ever been the fortune of the people of the United States, to be patronised by an itinerating race of English, Scotch, or Irish travelers, who, in "a laudable spirit of inquiry," come over among us, as they themselves asserted, "to judge candidly, and without prejudice, of our people and their institutions;" and after receiving the hospitalities and attentions of those to whom they had condescended an acquaintance, and fatigued with their exactions, to return home, and most heartily, and with a right good will, abuse us, always in general, and quite frequently, in particular, in a written book of travels. It were bootless either to classify or name the shoal of scribblers running down the catalogue, from "TOMMY MOORE, the Irish Rhymster," to CHARLES DICKENS, of "International Copy-right" notoriety—all equally celebrated, if not in the literary merit of the books themselves, yet altogether so for the kind temper and generous motives of their philanthropic labors!

The literary foreigner has threaded our country to ascertain "who reads an American book?"—the politician and pamphleteer, to earn his pension at home, in the noble object of spying out the nakedness of the land in our lack of institutions "time honored in Old England;"—a vulgar, gossipping old woman, to gather material for a lively and scandalous book;—and a clever, termigant play-actress, to get a rich husband, and "kick up a fuss generally,"—which in one way or other they have managed to accomplish, no doubt with singular satisfaction to themselves, and the exceeding joy of sundry among their equally honest and self-satisfied country people at home.

Such travelers were chiefly of the common line; traveling to write, and writing to *pay*. But we have now to notice one of another kind, *ostensibly* a traveler in the way of his profession. Agriculture and her sister arts, within the last twenty years, have attracted a larger share of the public attention than formerly, in a great portion of the United States, as partaking in the general progress of the day; and among the British authorities which our inquiring cultivators have sought to instruct them in their labors, and aid in their investigations, the published writings of a Scotch Professor—Johnston by name—in a small Chemico-Agricultural department of a university, so styled, in the city of Durham, have been consulted. Awakened to a notion that where a plausible book had made some impression for our benefit, the *author* of that book could make a more emphatic impression by his own presence, the managing department of the New-York State Agricultural Society, extended, some three years since, a sort of invitation, or hint, to the aforesaid Professor, that he should come over to the United States and deliver a course of lectures on "Chemistry as applied to Agriculture," *for a compensation*, which, after a sufficient amount of professional coquetry on his own part, he accepted. In due time, therefore, it became known that in the month of August, of the year 1849, "JAMES F. W. JOHNSTON, M. A., F. R. S. S. L. E., & F. G. S., C. S., &c. Reader of Chemistry and Mineralogy in the University of Durham"—we quote the title page of his book—arrived at Halifax, and spending some time in the Provinces of Nova Scotia, and New Brunswick, in four weeks thereafter entered the United States, and arrived in the city of Syracuse, in the state of New-York, on the 11th day of September; and on the 13th, at the great annual Fair and Cattle Show of the New-York State Agricultural Society, "at three P. M.,

delivered my address, in a large open tent, to several thousand people, by whom it was warmly and kindly received."

Now, we intend to deal fairly with Professor JOHNSTON. A man of respectable attainments—a chemist by profession—a lecturer in a school of some local celebrity, by occupation—and in the connection which his subject of teaching has to the agriculture of his own country, a farmer and a horticulturist, in theory at least,—and as a matter of course, supposed to be a gentleman in manners, we had, in our simplicity, supposed that we should obtain much information at his hands. We hoped—although against heavy odds, we admit—that our country, in the observations made upon it by an intelligent and truth loving spirit, would be fairly examined—so far as examined at all, and that if he presumed to indite a book of two stout volumes upon us and our institutions, both our people and their country would, at least, be treated with justice. It will be seen in what way and manner all these have been done.

We say *presume* to write a book upon the people of the United States and its institutions. Not that these subjects are so lofty and abstruse that they may not be touched by the pen of a foreigner, and that foreigner not a first class man either, by any means; but it is a matter of some presumption we humbly submit, for a *closet* man, cooped up for the greater part of his professional life within the walls of an ancient Saxon town, to take a broad leap across the Atlantic, "steam" over a portion of the bays and rivers, and lakes; trundle over a few of the railways of a country thousands of miles in extent; dive into a chemical laboratory here; attend a private entertainment there; partake in a set, or a casual conversation elsewhere; and make a *thorough* examination of nothing,—all within the space of four months, and then square himself deliberately to the composition of a work which he is to put forth with all the authority and self-complacency of a teacher in the sciences, physical, political, and ethical, as applied by a people, and to a country he had never before seen! This, at least, would be called presumption in an American who should *dare* to take such liberty with Old England, or any part of Great Britain, although somewhat *less* extensive in territory and population, than the United States. But it may be called *condescension* by the modest author himself, to the less enlightened curiosity of his "trans-atlantic cousins."

To be precise and in order: Professor JOHNSTON arrived at Halifax on the 7th day of August, 1849. On the 4th of September he took the steamboat at St. John, and arrived the following morning, at Portland, in the state of Maine, in time for the railway to Boston, where he arrived at 2 P. M., and after two full hours of keen observation, (a large share of it at the dinner table,) in that promising little town, again took the cars for New-Haven, where he arrived at 11 o'clock the same night.

"In this rapid run through New-England, only three things made a permanent impression on my mind. These were, first, that the general rudeness of the people which travelers speak of [what travelers? we would humbly inquire,] is not perceptible in New-England *generally. It may be more strikiag in the western states.*" But after all, our Professor doubts that even in Old England, if *all* classes of travelers were indiscriminately mixed up by fifties and sixties together in a train of cars, the passengers *might not behave so well* as those of New-England do. A precious, although a grudging confession, truly. "The second thing was the numerous country boxes or cottages, of all fashions and sizes, with their white painted walls and green jalousies, which skirted the railway during the last twenty miles of our ride to Boston. This is a peculiarly English feature, and indicates the existence among our trans-atlantic kindred, of that love of green fields, and of a quiet country life which characterizes so much our own island-home." Surprising! did our tra-

veled author suppose that the untutored Yankees dwelt in wigwams outside the cities, and lived by hunting, instead of growing farm crops, garden fruits, and vegetables? "And my third observation was, that though the drouth of Nova Scotia and New-Brunswick had extended into Maine, its effects became less perceptible as I advanced westward into the other New-England states, till, in Connecticut, the fields looked as beautifully green as I had seen them last at the mouth of the Mersey." It must have been a "permanent impression" truly, that in a range of four hundred miles, from the fog-ridden banks of Nova Scotia, and through a declining latitude of five degrees, he should have discovered that New-Haven weather had been quite as irreverent in its imitation of a "drouth" in the provinces, as its people are regardless of some of the practices of their provincial "kindred."

Spending four days in New-Haven, which gives him material for some eight pages of comment on what he saw in and around the city, and Connecticut in general, he started on the 10th for Syracuse in company with Professor NORTON. On his way up the Housatonic valley to Albany, whirling along in a rapid railroad train, he remarks on the "drift" and geological formation of the country, which he obtained, of course, from his intelligent informant and traveling companion. At Albany a stay of one night is made, and in the next half day's ride up the Mohawk, his geological observations continue, coupled with a dash of agricultural remark, and a running commentary now and then, neither new nor profound, on soils, climate, and crops. By way of variety, also, are interspersed the stereotyped remarks of foreigners upon the odd names of our towns and villages, and some equally original reflections upon our manner of elections, fondness of titled names, and popped corn, in particular. Rather annoyed at the accession of Mr. CLAY, to the traveling train at Utica, our author proceeds in his commentaries through Rome, not "the Niobe of nations," but little Rome, on the Mohawk, then full of enthusiastic curiosity for a sight at the great statesman; then to Verona, where no "two gentlemen" bid him "good morrow;" thence to Syracuse, where he arrives "at half-past three, distance 178 miles from Albany."

As Syracuse—to which place he had been invited by the State Agricultural Society, to deliver the usual address made before the multitude assembled to attend its annual jubilee—is to be a *point* in his travels and observations, a full chapter of thirty-three pages is devoted to the discussion of sundry matters and things appertaining thereto, and the country by which it is surrounded. As it was the theatre of his own personal display, too, for the time, we shall follow him somewhat closely for the two and a-half days—we like to be precise in some things—that he remained. With a like *originality* of remarks as before, he finds that Syracuse is "a new city of 16000 inhabitants, large hotels, numerous churches, and *skeleton* streets, which, if its prosperity continue, will soon be built up," —"so late as six years ago, the wilderness still surrounded the residence of the mayor —to whose hospitality I was indebted during my stay at Syracuse—where his garden now extends, and plum and peach trees and vines are in full and luxuriant bearing."

Our author's notes are *accurate*, no doubt; but we would give a trifle to learn the wonderful method of transforming a wilderness "into the sites of noble mansions and dwellings, with highly ornamental gardens, towering shade trees, and paved streets, which extend far beyond the fine premises of Mr. LEAVENWORTH, within the brief period of *six* years, and meekly inquire whether, if the word, twenty, were prefixed to the "six," it would not be nearer the mark? Such is our own recollection.

Professor JOHNSTON goes with his attentive friend, Mr. NORTON, into the show yard. Things here are, very naturally, compared with the show of the English Royal Agricul-

tural Society, and as they agree with that, is the exhibition more or less deserving. Some things he commends, other things furnish him a text for commentary, and as the people, in a country where the best of unimproved lands can be had for fifteen to twenty dollars an acre, have not as yet under-drained all their swamps, at an expense of twenty to thirty dollars the acre, he has made up his mind (another *original* idea) that as "yet in New-England and New-York, there is no such thing as local attachment—the love of a place because it is a man's own—generally speaking every farm, from Eastport in Maine, to Buffalo on Lake Erie, is for sale!" Accommodating people, most truly! Thence follows a homily on the superior production of land where the owner of the soil and its cultivator, hold the relative attitudes of landlord and tenant, upon which his remarks are quite as profound as a stickler for the cast-off feudal usages of Europe may be supposed, winding up by an equivocal compliment to "our respected Yankee cousins."

"In the New-England states and in New-York the Devon blood prevails. Most of the stock are *grades*, as they are called, or crosses of the pure Devon bull with the older stock of the country, which is originally of mixed English and Dutch of various kinds. The cows exhibited were nearly all Devons, and there was a beautiful Devon bull in the yard which had been bred in Canada. In the Western and South-Western states the Short-horn blood predominates, and of this blood there were some good specimens exhibited." p. 165, vol. 1. An astute *agricultural* professor, most truly; who, in the Provinces, a fortnight before this, affected to be a judge of cattle! The veriest tyro on earth, who had ever slept a night on a stock farm in "New-England or New-York," would deserve to have his ears soundly boxed for a remark betraying such profound ignorance and stupidity. Did Mr. JOHNSTON go into the cattle quarter of the show grounds at all? Or if he did, had he knowledge in live stock enough to discriminate between the scores of Short-horns, the Herefords, the Devons, the Ayrshires—his own country-kine, and the various *grades* of almost every intermixture that he could not but see there? Or was his information drawn from some one quite as ignorant and unobserving as himself? There were some 400 cattle exhibited on the Syracuse show-ground, and there were not a score of *Devon cows* among them all, although of Devons, including bulls, cows, heifers, and calves, there was a fine collection: but there were at least three Short-horns to one Devon, and the best show of Short-horns yet exhibited in the state, and several of them recently imported from England. Equally correct is the remark that "in the New-England States and New-York the Devon blood prevails." In those states not one animal in twenty has a *trace* of Devon blood in its veins, as Devon cattle are *now* understood. Both Devons and Short-horns are occasi nally found in New-England, and so are Ayrshires, Alderneys, and Herefords, in their purity; and so also are there many grade cattle of those bloods; but, in comparison with the whole, they are few, like our author's facts, and far between. And so with the Short-horns in "the Western and south Western states," towards which he never advanced beyond the foot of Lake Erie, where he asserts that "the Short-horn blood predominates." In regard to New-England and New-York he must have made his very accurate observations as he "steamed, and railed" through that country; and a most convenient clairvoyance undoubtedly helped him to the like accurate information regarding the Western and South western cattle.

Our horses "are in reality too light for heavy farm-work." Our author believes that "when the period arrives for deeper ploughing and more extensive cultivation of heavy land, a heavier and stronger stock of horses will be necessary." When he demonstrates to us that the clumsy draught horse of Clydesdale, or the snail-paced cart-horse of Lancashire, with the same weight of carcass applied to the work, and the same amount of food,

and the same manual assistance, can plow *two acres* of strong land *in one day*, and plow it as deep and as well as a team of "limber" New-York horses, we shall give more weight to his authority. The time has not *yet* arrived for a "*Britisher*"—so *self-styled*, only—to read the Yankee a lesson in the breeding of *useful* horses.

In some other branches of the exhibition at Syracuse, Professor JOHNSTON was quite as discriminating as in the stock department. "Farm and dairy produce, however, and fruits, receive much attention from the New-York State Society, and had an appropriate place assigned to them under the tents and sheds which were scattered on the grounds." In his very *particular* notice of the fruits—and what we have quoted is all of it—we have much to admire in the extent of his information. An unsophisticated man would have supposed that a tent, regal in size, 120 by 80 feet in area, containing shelves placed amphitheatre-like the full length of its oval sides, and filled with thousands of the choicest specimens of apples, pears, quinces, grapes, peaches, plums, and melons, *all grown in the open air*, and of the most exquisite flavor, garnished with beautiful collections of flowers, and by their tempting luxuriance attracting the attention of a dense crowd during the three days of their exhibition, would have excited a remark beyond simply naming their presence in general terms. But true to the instinctive taste of his own foggy hills, where not a thing of them all is grown out of doors, he no doubt regarded them with the like affection of the old laird at the sight of the sugar-plums: "Hoot mon! and what is all this baubee trumpery to a bicker of kail broose?" In his after observations, our traveler remarks somewhat upon our apple culture, none of which remarks are new, and part of them incorrect. Of apples, he says, "those varieties which are best for the table are unfit *alone* to make a palatable cider." "Where ignorance is bliss, 'tis folly to be wise," said a much abler man than Professor JOHNSTON, and it were equally wise for his own credit that *he* should speak of that only of which he knew something. He has however introduced the extensive orchards of Mr. PELL, and their management, but draws no conclusions. In this place, he says that Mr. P. has 2,000 Newtown Pippin apple trees in full bearing. In the second volume he states, that "Mr. PELL has 20,000 apple trees, *chiefly* Newtown Pippins." We should really like to know *how many* apple trees Mr. PELL *has* got in his orchard, so that the disputed question of two thousand, or twenty thousand—for there is *some* difference in the number—may be set at rest.

Discharging creditably, though in manner and taste quite mistakenly, his public duties at Syracuse, he extends his rambles to the fine farm of Mr. GEDDES, a few miles out of town, which gives him opportunity for some geological remarks upon soils—all borrowed—and modes of agriculture, not new. He then leaves in the railway for Buffalo on the 15th, after a two and a half days' sojourn in the richest agricultural county of the state. "Introduced to a gentlemanly-looking physician," he soon apologizes for the rudeness of an answer which he gave him to a question which we are quite sure no "gentlemanly-looking" man of any profession would have addressed to him; and then a commentary on manners and language in general, in which neither the words "Britisher" nor "Transatlantic Cousins," occur. JOE SMITH and company, of the Mormon faith, now come in for a share of his reflections, followed up by a fling at the fanaticism of his followers, in which he candidly admits that a large accession to their force had come from England to sustain the open polygamy of SMITH, when living, and BRIGHAM YOUNG, now chief apostle and leader of the tribe. Agriculture—of which every idea that he has, as applied to the region of which he discourses, is given by some previously introduced acquaintance, or fellow passenger in the cars—receives a part of his attention; and politics, forms of govern-

ment, existing institutions, and miscellaneous matters, follow, as drawn from, but not credited to, the books and statistical tables of which he is possessed.

Hailing from Buffalo, where our traveler spent an *entire* night, he dashes, *in imagination*, away to the far west, and by aid of the aforesaid statistical tables and maps, and geographies, and Lyell's, and other's American Geology, talks of Wisconsin, and the country about Lake Superior, the "Hog crop," and "Cattle crop" of Ohio, and settles down with a surprisingly "clever" act of "a gentleman introduced to him at Syracuse, but whose name he did not know," who invited him to spend the night at his house, two miles out of the city, which he declined, owing to the brief stay he should make, but who, nevertheless, furnished him unsolicited, with free lodgings at the "American Hotel." This is noted "as an instance of the proneness of our *trans-atlantic cousins* to the virtue of hospitality," as also the truth of his own reiterated remark, that "blood is thicker than water."

Stepping in, while at Buffalo, at a butcher's, after asking him sundry questions, which were duly answered, and then answering the butcher's questions in turn, he writes,—"Well, sir, says he, (the butcher,) we live in a great country here—we are a great people." Now we dare risk our veracity against that of Professor JOHNSTON, that the aforesaid butcher never said any such thing; or, if he did say so, that he was a foreigner of British birth. "It is unpleasant to a stranger to be always called upon to admire and praise what he sees in a foreign country; and it is a part of the perversity of human nature to withhold, upon earnest request, what, if unasked, would be freely and spontaneously given." Then a fling at the "brag and swagger among individuals in the United States." An *amiable* man, too, is Professor JOHNSTON.

Leaving Buffalo on the morning of the 16th, for the Falls of Niagara, he tarried a full twenty-four hours at the latter place. He viewed the falls from both sides of the river, and treats us to a few trite remarks of moderate admiration, and a borrowed cut of the geological formation of the rocks at that point. He then hurries off to Lewiston, on the 17th, and takes the boat, where "we *steamed* through the mouth of the Niagara river." We really wish, for the reputation of all concerned, that our Professor had informed us whether it was himself and his companions who did so much *steaming*,—whether it was simply the tea-kettle *steaming* up the water for their whiskey-toddy, or, only the innocent boat itself, driving her paddle-wheels by aid of steam through the water—for this word "steaming" has sometimes an equivocal meaning on both shores of Lake Ontario, among "our trans-atlantic cousins."

On board the boat on the way to Oswego, another conversation was had "with a practical farmer from Syracuse." The result of this conversation was, a *drawn* conclusion as to the profits and hopes of farming as a business. Yet he was impressed with the opinion that the New-York farmers knew much more of the geological formation of their own soils, than the English farmers did of theirs. From six to half past ten o'clock in the morning, our author waited at Oswego, where he found that "the flouring mills were the chief source of the prosperity of the town." The extensive commerce with the upper lakes and with Canada, which that thriving town enjoys, he did not hear of. Thence to Sackett's Harbor, which "shows nothing to attract attention, beyond its hotel, and some signs of increase in size." From Sackett's Harbor "we steamed" again through the Thousand Islands, to Kingston, Upper Canada, and "at 6 P. M. we landed on the pier." "I almost felt myself at home again, as I set my foot on shore in sight of the British flag." Here in "the kind welcome of a Kingston family," and under the ample folds and broad protection of "the British flag," he luxuriates for a full week—a

longer time than he spent in the whole region of the United States from New-Haven to Niagara, in which prolific tour he drew the material for half a volume of speculation and theory, on matters and things in general. We here leave the author for several months, to talk to his countrymen at home, as he may, of the advantages of "the Provinces" over the United States, regretting only, as we close this part of his travels, that his good taste could not have dictated a better story than the shabby slur upon the housekeeping virtues of our Yankee women, which he has chronicled: "I'll go over to Canada for a wife when I marry," said a young South Shore farmer to his friend. "When I come home at night she'll have a nice blazing fire on, and a clean kitchen, and a comfortable supper for for me; but if I marry a New-Yorker, it 'll be, when I come home, 'JOHN, go down to the well for some water, to make some tea,' or 'JOHN, go and bring some logs to put on the fire, to boil the kettle.' No, no; a Canadian woman 's the wife for me." Vol. 1, p. 263. His "South Shore" hero probably wanted a *drudge*, instead of a companion.

On the 24th of the following December, our author again finds himself, amid the discomforts of winter travel, entering the north-east point of Maine, in a journey from St. John to Boston and Albany, at which latter place he was engaged to deliver a course of lectures on "the general relations of Science to Agriculture," before the members of the Legislature, and the New-York State Agricultural Society. On the 28th he is again domiciled at the hospitable quarters of his young friend, Professor NORTON, in New-Haven. Here he makes a stay of several days; and although he observes a studied silence regarding it, we have no doubt he was introduced by Mr. NORTON to several of the learned and accomplished faculty of Yale College, had free access to the extensive and richly stored cabinets of Professor SILLIMAN, and that all the geological, mineralogical and chemical treasures of that highly reputable University were opened to him; but whether he felt bound by considerations of delicacy to say nothing of either, or all of them, or whether he found himself, on comparison with men of *real* attainments, altogether out of position, is no business of ours; yet, as a characteristic acknowledgment of the kind attentions and hospitality he *must* have received at New-Haven, he sneakingly records a dirty slander of FENIMORE COOPER, an American author, on the meanness of Connecticut hospitality! And it is with such creeping inuendoes at his heels, that we have followed him thus far on his journey in the United States. At so fitting an opportunity we cannot forego the relation of a private anecdote, slightly touching the *good manners* of this Agricultural Professor: During his stay at one of our cities, where he gave lectures, he was invited by a gentleman residing some miles out of town, to dine with a party, among which were several gentlemen of distinction, and an ex-president of the United States. A highly respectable Scotch gentleman, resident in the neighborhood, was of the party, and presuming that both he, and Mr. JOHNSTON, would be mutually pleased at meeting, as fellow countrymen, their host introduced them to what "he hoped," as he led them together, "would be an intimate acquaintance." But our PROFESSOR, after slightly noticing his countryman, abruptly turned away, and continued a conversation with his host. Indignant that so marked an insult should be given to an esteemed guest and neighbor, simply because he was a countryman of his own, by Mr. JOHNSTON, our host immediately turned to the other, and in company with the ex-president, who had also witnessed the petty slight, renewed the conversation with marked attention, and left the consciously embarrassed PROFESSOR to the enjoyment of his own affected superiority!

Mr. JOHNSTON arrived at Albany on the 4th day of January, 1850. He staid three weeks, and delivered his course of lectures, which, as we have not them under notice, we shall pass. Here, with a ride or two out of town, a visit to the Shakers at Niskayu-

na, and his usual reference to statistical tables, geological reports, speeches of legislators, and pamphlets, he makes up sundry sage commentaries and conclusions on American government, institutions, religion, life, and manners; some of which are sensible enough when simple of solution, and others ridiculously absurd, as touching the true results which a fair mode of reasoning would draw from his premises. Here is a specimen: He attended the annual meeting of the State Agricultural Society, at which the usual business of the Society was transacted. "I was struck with the gravity and decorum with which the discussion was carried on, and with the apparent self-possession of the speakers. It is partly to the general acknowledgment of *no higher rank than his own*, that the absence of *our insular* nervousness in the American speaker, is to be ascribed; but partly, also, *to the undisciplined and uncontrolled way in which children are brought up.*"(*!*) He also *coins* another story, in which a lady is brought in, to prove (to us,) the utter emptiness of his conclusion. Our professor is also *great* on American slavery, which he discusses with about the same amplitude of reasoning, that certain other foreign philanthropists indulge, and reads us frequent lectures on the astounding benefits of *free-trade*, as exhibited in the recent striking and disinterested examples of the English government, for our "trans-atlantic" imitation!

Jan. 26, at Philadelphia. Along the *railway route*, and *in the depth of winter*, another geological notice of the country—*original in himself*, no doubt! In this city he was invited by Professor HARE to attend a "very agreeable *whister*(*!*) party,"—a new social invention we fancy— probably *chemical* or *geological*, as we do not know that name in any other of the sciences. We are happy to learn that the *green sands* and phosphates of lime of New-Jersey, have struck his attention—for his skill in such subjects we have a true respect—and that his examinations confirm the opinions of our own chemists as to their permanent and great value to agriculture. At the Eutaw House—"Eutaw's Hotel,"—Baltimore, our PROFESSOR gives us an inkling into his gastronomic and convivial propensities, in the discussion of "Canvass-backs," and "Apple-toddy." A highly wrought recipe for making the latter is given, in which the virtues of a "*red-streak* apple, roasted before a *slow* fire, on a *China* plate," are a part of the process; but whether the compound is to be stirred with a *sharp* stick or a blunt one, we are not informed. This, he has discovered, although a winter, is not a *very* "slow" drink, and also that mint-juleps are a summer beverage, which the "jovial middle 'states men,'" and not the strait-laced temperance Yankees, had discovered to him!

Washington. Here again the guide books and the scribblings of foreign tourists, are emptied out upon his groaning table, for scissoring, clipping, and pasting. "Magnificent distances," the PRESIDENT, Congress, the Supreme Court, the public buildings, Southern Nullification, tariff, free-trade, as taught us by *English* policy, slavery, the public lands, and Smithsonian Institute, each, every, and all of them came under his emasculating pen, and are discussed with a self-complacency and decision from which there is no appeal. The only new subject of discussion is that of the Agricultural Bureau, in which, we regret to say, no *new* idea is advanced. But he is quite clear that two or three Republics, made out of our existing one, would be a wholesome improvement upon our present system; and the annexation of Cuba and Canada, he fears, would be *embarrassing* to our President and his Cabinet!

While in Washington, our friend made a detour down into "Old Virginia," where he "steamed" it—(what an inveterate toper the Professor has got to be!)—*eight miles* on the Potomac to Alexandria! And here the statistics again rattle like a hail shower about his ferocious goose quill. Slang words, political economy, rise, progress, and increase of

slavery, all jingle again in beautiful succession. We have a story about a lady and a "Britisher," and our unfortunate politics continue to annoy his chemico-agricultural head until he leaves the capitol, and again addresses himself to the north.

Arrived at New-York on the 5th February, our author adjusts himself to the settlement of the conflicting pretensions, between his own country and ours, to skill and superiority in the construction of Atlantic steamers, the commerce, manufactures, population, and prosperity of our great emporium, and makes up his mind that after all it is only a British town, manned and worked by British labor, supplied by British capital, and kept in this breathing world by British influence! Here the old files of statistics are unfolded, and their subjects again canvassed, during his six days stay, in which his agricultural researches are extended into the American Institute, and back into Mr. PELL'S apple orchard, the only one he appears yet to have heard of on this side the Atlantic.

February 11th. Back to Boston. His stay here, off and on, was now six weeks, having been engaged in giving a course of lectures at the Lowell Institute, on the "Relations of Science to Agriculture,"—a repetition of those delivered at Albany. His mind here seems to have been sorely exercised in comparing the Service and Liturgy of the Established Church in England with that of the United States, and especially in its application to the Unitarian faith, as if the latter doctrines were solely American, and had not been imported a century ago from England. The Mormons and their polygamy, again haunt his peace, and he is sadly puzzled to ascertain whether "their Senators and Representatives would bring their *harems* to Washington with impunity; and if one of their wives eloped to Boston, the husband could reclaim her without doubt, as he now does his slave—[the Mormons *do not* hold *slaves*, we believe,] all the laws of New-England against bigamy, notwithstanding?"

It were bootless to follow our erudite Professor through all the various topics which engage the remaining part of his time while in and around Boston. In the dead of winter, when he could make few or no personal observations upon the geology, or soils of the neighborhood, he draws upon the various surveys, and authors, which he found in abundant number around him; and his various disquisitions, and dissertations, of which we have many, are still taken from the statistics, and official reports of the Commonwealth, to neither of which does he give the slightest credit. In the large amount of this material which he has so unblushingly appropriated, we are reminded of that prince of critics, old JOHN DRYDEN, who, finding a plagiarist of remarkable dimensions, exclaimed in his indignation, "that instead of picking here, and stealing there, like a common literary mouser, he pounced down and appropriated the spoils of others with all the audacity of a conqueror!" Indeed, we think he shows a better taste in the selection of his subjects while at Boston, than at any other point in his travels; and possibly, had he remained some months longer, he might have informed himself into quite a tolerable train of extract. But we doubt whether, after all, they could have indicated other than the researches and notices of a remarkably small man. Had nature favored him with a modicum of the discrimination and modesty of a LYELL, and his own judgment furnished him with an equal disposition to investigate for himself upon the broad surface of our country, and to an equal extent that his own vanity and self-complacency permitted him to appropriate the not exceedingly well selected subjects from the toils of others, his own countrymen would be better instructed, and our respect for his rectitude of motive be enhanced.

His stories, by way of illustrating his conclusions, are absurd and pointless; his pickings, of matter poured forth in the bitterness of party feeling, out of newspapers, are malicious and false; and the occasional anecdotes which he chronicles, as told him in the

mischevious waggery of others, are so many Munchausens which prey upon his credulity. That he makes some sensible and proper remarks, and arrives at occasional right conclusions, is not denied; but the carping spirit in which he generally discusses his subjects, and the deprecatory approbation which he yields when he can no longer withhold it, are a lively testimony to the grudging temper in which he looks upon us and our country. We can afford to be criticised—abused, even—for we confess to many and frequent delinquencies—when necessary, and done with smartness and discrimination from the salient points of one's own observation; indeed a little wholesome castigation to our National self-complacency may be at times most wholesomely administered; but we choose that it be done by the hand of a master. For the donkey-like reproof of a quack and a bungler, we have no relish.

We sat down to these volumes of Professor JOHNSTON with the anticipation that in a man of pretended attainments in our own favorite science of agriculture, and its attendant pursuits, a traveler to some extent in the way of his profession, on the European Continent, and now in the maturity of his intellect and the vigor of his mind, coming to a country, certainly not without interest to an intelligent investigator of the natural sciences, to make his professional observations, and to select objects of interest and novelty for the instruction of his countrymen, we should find something both rich and rare. A reading of his books has, to be sure, discovered to us much in either; but we have risen from our search with the sorrowing conviction that what he has chronicled as rare, is not particularly rich, and whatever he has recorded as rich is not at all rare. Had he confined himself simply to his *professional*, labors and investigations, and they been *really* labors and investigations *of his own*, we doubt not he could have made up a volume of matter both interesting and instructive. In the United States was a fresh mine of vast resource, inviting both his chemical and his agricultural exploration. He chose to neglect these, to become philosopher, politician, and political economist; and on subjects upon which vastly abler foreigners than himself have preserved a discreet silence, or written but moderately well, he has poured out his half-pledged opinions with the flippancy, garrulity and emptiness of a Trollope, and a Fidler. A parting specimen we give in our traveler's visit to Springfield, when speaking of the national armory at that place. "Springfield, from its position as the place of meeting of so many railways, is remarkably well *chosen* as the site of a national arsenal. Weapons for 300,000 men can, upon the first telegraphic signal, be dispatched either up the Connecticut towards Lower Canada, through Albany towards the Lakes, or to the Atlantic shores northward by Boston, or southward by New-York." A *school boy* might have said this very prettily. But it so happens that this national armory was established by our government upwards of half a century ago, when Springfield was an obscure inland town, off from navigable waters, or easy communication, and for the very reason that it was so, and a long generation before either *railways* or *telegraphs* were known! The wisdom of Congress in this matter is therefore, as applied by our Professor, altogether apocryphal. The accident that Springfield lay in a central position, and on the best line of construction, made that town "the place of meeting of so many railways." The railways met the arsenal—not the arsenal the railways. Our Professor's sagacity in this matter equals that of his philosophic prototype, who acknowledged the great kindness of Providence in making the navigable rivers run by the great towns and cities, that the people who dwelt there might be accommodated in their shipping facilities!

But we tire of quotations, which might, of like character, be almost indefinitely extended from the two volumes before us. On the 26th March, Mr. JOHNSTON left Boston

for the valley of the Connecticut, visited Springfield, Northampton, Amherst, and Greenfield. "Greenfield is a small town, *new*, straggling, and unfinished, as *all* these country towns are." These Connecticut valley towns, we believe, are about *two hundred* years old! For the first time he now appears to be awake to the beautiful scenery of our country. In this jaunt he is received by every one on whom he calls, with courtesy and marked attention, and condescends to give a trifling credit for it. His manners mend with the season, and probably had he sojourned during the summer among the Yankees, he might have become as agreeable a man as an unpolished manner, and an uncouth provincial accent in his language, would have permitted. He dashes on over the railway to Albany, stops a day there, and goes down the Hudson to Poughkeepsie in a steamboat, is disappointed in its scenery—sees nothing to admire, and, in a car ride along the banks of the river to New-York, makes up his mind that he "was not in a condition to form an adequate idea of what its beauties in its summer garb really are!"

From New-York to New-Haven, and thence to Boston. On the third day of April, A. D. 1850, Professor JOHNSTON leaves, for the last, as well as only time, we trust, the shores of America, for England. We owe an apology to the reader for spending so much time upon a subject so little to our taste as the one we have presented; but as we, in common with our agricultural and horticultural friends, had expected something in our own line, from one who made high pretensions while here to instruct us in things both new and important, we have noticed his book but to chronicle another instance of the sounding brass and tinkling cymbal that so often greet us from our "Cis-Atlantic" teachers. We have done it also as a thorough confirmation of the fact that a foreigner in "getting up" a book of travels on America, has but to "steam" it across the Atlantic, trundle a thousand or two miles over our railways, gather up half-a-dozen Champagne baskets of travels, pamphlets, official reports of Legislatures, and societies—this last not much matter what—hold a conversation now and then with an ostler, tide-waiter, or barkeeper, "steam" it home again with all possible despatch, and become a most accomplished "professor" of book-making on America! JEFFREYS.

THE VALUE OF GREEN-HOUSES TO INVALIDS.

BY DR. STEVENS, NEW-YORK.

WE ask the especial attention of readers interested in the subject, to the following remarks, by one of the most distinguished physicians in the country, on the sanitary effects of green-houses. At a moderate cost, many a family might enjoy the delightful bloom and fragrance of exotics in winter, with the satisfaction of providing for an invalid member of that family, the soothing influences of the air of Madeira or Cuba. In a public point of view the matter is even more important—as Dr. S. truly suggests. ED.

DEAR SIR: Having for many years suffered from a pulmonary complaint, I am led to avail myself of your Journal, to offer some observations on a subject lying mid-way between our respective callings. Some ten or twelve years since, in visiting the green-house of Mr. Niblo, then my neighbor in Broadway, during the winter, I found the atmosphere exceedingly congenial. It abated my cough, rendered the expectoration loose and easy, softened the skin, and induced a comfortable state of feeling, approaching to exhileration. Wishing to have such an atmosphere at command, I constructed a cold grapery, in which,

whenever it has been convenient, I have passed the hours of reading and study. The climate of a cold green-house, in a sunny day of the winter or spring, is a Florida climate, and is entirely different from that of an artificially heated atmosphere. I venture to recommend it under most circumstances, to pulmonary invalids, in preference to the more expensive plan of removal to the South, involving, as it does, much discomfiture, interruption of business, hazardous exposure, and entire separation from friends.

While on this subject, I am induced to speak of the importance of glass structures for convalescents in hospitals. The New-York Hospital has already been, and the Ward's Island Hospital will soon be provided with such structures, of which the importance can scarcely be over-estimated. Who that has noticed the instinctive desire of man and animals, to bask in the sun, will fail to appreciate the advantage of providing the means of such enjoyment for those who are able to leave a sick room.

And now, sir, I leave the matter in your hands. What men of wealth may do for themselves, and what the public may do for its charities, the public should do for the middling classes and the poor. They should establish winter gardens in all our great cities.

I am, &c. A. H. Stevens.

Astoria, Long-Island, July 17, 1851.

THE ISABELLA GRAPE—ITS HISTORY, etc.

BY L. F. ALLEN, BLACK ROCK, N. Y.

Fruits—indeed anything which have become celebrated—are an interesting subject of history. Of such is the Isabella Grape, a *story* about which, many years ago—perhaps twenty—I chronicled in the Genesee Farmer, published in Rochester. As my attention was again called to the subject a day or two since, in a pleasant interview with my old friend and acquaintance, General Joseph G. Swift, long connected with our army, and for many years past with the Topographical Engineer Corps of the general government, and now a resident of Geneva, N. Y., I refer to it for the purpose of putting the record in a more enduring form in the pages of the Horticulturist.

I first knew the Isabella grape, when a boy, in Norwich, Connecticut, about the year 1817 or 18. It then grew in several gardens there, and from its great luxuriance, and the fine flavor of its fruit, I became exceedingly interested in its origin. The parent vine was traced to the garden attached to what was called the "Vernet House," which stood near what was then "the Landing," now Norwich city. Into that garden, some years before the late war with England, say 1807, 8, or 9, the grape was introduced by Mr. Vernet, a French West Indian, who built the house, and there resided several years. Where he brought the grape from was unknown; but as he was largely engaged in the West India trade, it was supposed he brought it from one of the French West India islands. The vine then had no other name there, than the "Vernet Grape." I have since grown it from cuttings obtained from the original stock in Norwich, and roots of the Isabella sent me from the Brooklyn nurseries, side by side; and the vines, in leaf, growth, habit, and fruit, were identical.

In the city of New-York, about 1825, or '6, I became acquainted with the *Isabella* Grape, and immediately recognised it as the Vernet Grape of Norwich. In 1828, the late William Prince, nurseryman, of the Linnæan Garden, in Flushing, Long-Island, published "A Short Treatise on Horticulture," on page 51 of which occurs the following:

"*Isabella Grape*.—This is an American Grape, a native of Dorchester, South Carolina, and was introduced into this state by Mrs. ISABELLA GIBBS, the lady of GEORGE GIBBS, Esq., of St. Augustine, who then resided at Brooklyn, Long Island, and in honor of that lady, has been called Isabella Grape."

In his description of the grape, which follows, Mr. PRINCE further remarks: "This grape, of which but a single vine existed in *any garden* in 1816, and which I at that time met with in the possession of the gentleman before mentioned, (alluding to Gen. SWIFT,) and deemed worthy of a notice, and a name," &c.

In the recent conversation referred to with Gen. SWIFT, he remarked: "The Isabella Grape originated eight miles from Charleston, S. C., at GOOSE CREEK, in a garden. It is a hybrid between a *Burgundy* Grape, introduced by the early Hugenots, who settled in South Carolina, and the *Fox* Grape of that state. The Isabella Grape was taken from the garden where it originated, to Mr. N. SMITH'S plantation, on Cape Fear, in South Carolina, and from there was carried by Mrs. Col. GIBBS, to Brooklyn, N. Y. I afterwards purchased the residence and garden of Col. GIBBS, where I found the grape, and first introduced it to the late Mr. PRINCE. He proposed to name it after Mrs. SWIFT. I replied, No. Let justice be done; call it after her who introduced it here, Mrs. GIBBS—her name is ISABELLA, and the grape was so named."

Such, unquestionably, is the history of the Isabella Grape, so far as its introduction into Brooklyn, and its name is concerned. At what time the grape originated, or was *first known* in South Carolina, Genl. SWIFT has no knowledge. It may have been cultivated many years in the neighborhood of its origin; and from Charleston Mr. VERNET may have obtained it, as it has not since been known as a West India grape, and between Charleston and Norwich then, more than now, existed much commercial intercourse. Yet this is not certain. But *certain* it is, for near ten years—possibly more—the grape was known in Connecticut, before it was in Brooklyn. Genl. SWIFT also stated to me that he wrote an account of the grape and its introduction to Mr. PRINCE, for *Skinner's American Farmer*, published in Baltimore, in 1819 or '20.

To the above account, while in the mood, I will devote a moment to a brief

GOSSIP ON GRAPES.

Early in last October I spent a delightful week in Cincinnati. It was the week of their great State Cattle Show, their grand Horticultural Jubilee, and it was also a week of hospitality, of kindness, and polite attentions, from those residents with whom, together with some of my neighbors, and friends of my own state, I became acquainted. During our sojourn there, we visited the finest and most extensive vineyards in the neighborhood, Mr. LONGWORTH'S, Mr. BUCHANAN'S, Mr. ERNST'S, Mr. RESOR'S, and others. The luscious, large, plump, and wonderfully developed fruit of the Catawba, then in their full ripeness, excelled any *out-door* native grapes I ever beheld, not excepting the finest Isabellas of Long Island, or the Hudson valley—hardly excelled, indeed, by the Black Hamburgh of a hot-house; and the numerous vineyards of the Catawba, dotting the hillsides and valleys, from an area of a few rods, to fifteen acres in extent, around the city, to an eastern man, were truly a luxury to look upon. This, too, is the grand grape of the Ohio valley, and the only good *table* grape, except the Herbemont, which I found in the garden of Mr. LONGWORTH, that attracted my attention. The Herbemont is small, but of a delicious, mild and aromatic flavor; and from a sample of its wine, tasted at Mr. L.'s, it must become a valuable *wine* grape.

But in the Isabellas, of which there are many cultivated there, I was disappointed.

They are not more than two-thirds the size of those of New-York, inferior in juice and flavor, and most of them had a shrivelled appearance. Possibly the soil, (a friable limestone clay,) is in fault, for a finer climate to perfect their growth and ripening, I can hardly imagine. And such, I was told, is the usual character of the Isabella at and about Cincinnati.

En passant on *American* wines. I was familiarly chatting not long since, at a dinner table over a glass of wine, with a distinguished American—I could tell his name, but for the thought that I were boasting of a great man's acquaintance and friendship—and I named the Champagne Catawba of Cincinnati. "Don't tell me of *American* wines," said he—"we have a thousand good things in America—more than any where else—but we can't make *good* wines. The *volcanic* and other *friable* soils of western Europe, swept by the Atlantic winds, are the only good wine soils of the world, we hear of. From the northern coast of the Mediterranean we get some *tolerable* wines. In eastern Europe, and Asia, we know of none. In California and on our Pacific coast, we may, in time, produce good wines—possibly from the native grape found there; and when so, we'll talk of American wines. But for the present we must be content to grow cotton and wool, and our other valuable products for the wine countries of Europe, and let them grow wines for us in return." Perhaps it is so; for I could not gainsay authority so high on such a subject, as on many others, from which there is hardly an appeal.

Yet, the Champagnes and Hocks of Cincinnati, are largely drank at the best public tables there, and, I am told, preferred, at the same price, to the foreign Champagnes and Hocks. Time must yet test this matter. Yours truly, LEWIS F. ALLEN.

Black Rock, July, 1851.

REMARKS.—Mr. ALLEN'S account of the origin of the Isabella grape is a valuable contribution to our history of native fruits. There is, we think, no doubt whatever that the Isabella grapes in general cultivation over the country at large, all sprung from the original South Carolina vine whose history is correctly given by Gen. SWIFT. But there is no reason whatever for thinking that vine to have been a hybrid between the Fox grape and the foreign Burgundy. There are indeed, two very good reasons to the contrary. The first is, that any good botanist and vegetable physiologist need not be told that the Isabella is a pure unmixed native grape, like the Catawba—having unmistakable characteristics of growth and flavor, without a particle or trace of the habits of the grapes of Europe—a distinct species: the other is, that it differs so little from the native *Vitis labrusca*, or summer grape, as to leave no doubt of its being merely a good accidental seedling. What Mr. ALLEN says about the Vernet grape which he knew many years earlier, goes to show that other similar seedlings had accidentally sprung up earlier than that which is now known as the Isabella, and we have also once found a wild vine of this species on the banks of the Hudson, so nearly like the Isabella as not readily to be distinguished from it. The fact that a West India grape would not be *hardy* in this latitude, settles the conjecture touching that origin of the variety.

There is, unfortunately, no well authenticated proof that our native grape has ever been hybridised with the grapes of Europe. All our seedlings, so far proved, are chance seedlings—but we believe some of our pomologists are now busy with the experiment of crossing the species if possible—to effect a more speedy amelioration of the hardy native varieties. A cross between Black Hamburgh and Isabella, giving us the size and luscious flavor of the former, and the hardiness of the latter, would be worth untold thousands.

As to American wine, the question is no longer a mooted one—so far as Hock and sparkling wine is concerned—for the last and best vintages of the Ohio, have to our own

knowledge, been tasted this year by some of the best judges in our Atlantic cities—judges familiar with the same grade of wines on the Rhine—who rate the Ohio wines *very high*, both for flavor and *boquet*. The Ohio will soon become as famous for light wines, as the Rhine.

We have no reason, as yet, to disagree with Mr. WEBSTER (for we presume, from having heard this remark before, that our correspondent refers to that gentleman) respecting the necessity of a different soil and climate from ours, in this portion of the Union, for the production of good dry wines of the same grade as Madeiras and Sherries. But we understand from good authority, that California not only possesses these requisites, but has actually begun to produce excellent wines of this character. ED.

NOTES ON THE CULTURE OF AQUATICS AND NATIVE PLANTS.

BY DR. MUNSON, NEW-HAVEN, CT.

DEAR SIR—For the gratification of such of your readers as may have a taste for the cultivation of aquatic plants, and have not an appropriate situation for their culture, I would subjoin for the Horticulturist, (should you think it worth a place there,) a plan for growing them on a small scale; and give you a description of an aquarium in the garden of J. L. COMSTOCK, M. D., of Hartford, Ct.

It consists of a cheaply constructed box, made of thick pine boards, roughly put together, about sixteen feet long, fifteen inches wide, and twenty deep, open at the top only, having partitions and spaces proportioned to the room allotted to each plant, or parcel of plants, the divisions being from one to two feet apart. These spaces are filled nearly full of soil appropriate to the plants, and the water is supplied generally in sufficient abundance from a roof, by rains, through a trough leading to them, all excess running off.

In this the DOCTOR had quite an interesting group of wildings, which have luxuriated in their native vigor, apparently unconscious of any inferiority to some of their exotic neighbors.

Among them I noticed the white Water Lily, (*Nymphæa odorata.*) The Pitcher plant, (*Sarracenia purpurea.*) The Cardinal flower, (*Lobelia cardinalis,*) *Vaccinium oceycoccus*, *Acorus calamus*, *Typha latifolia*, *Chelone glabra*, *Caltha palustris*, &c., &c. In the vicinity, the DOCTOR had introduced, and had growing in perfection, many other interesting native flowering plants and trees. The following are some noticed by me:

Lygodium palmatum, *Habenaria grandiflora*, *Arctostaphylos uva ursi*, beautifully flourishing, *Aster cyaneus*, *Asarum canadense*, *Osmunda regalis*. Several species *Cornus*, *Viburnum*, *Salix*, and *Rhododendron*. Also *Aristolochia sipho*, from the Catskill mountains, a most luxuriant climber. *Leptanthus gramineus;* beside species of the *Yucca*, *Epilobium*, *Thalictrum*, *Sedum*, *Clethra*, *Liatris*, *Ludwigia*, *Staphylea*, *Euonymus*, *Equisitum*, *Viola*, &c., and *Solidago odora*, very flourishing. This latter species is worth cultivating for its fragrance. It is rare about New-Haven, and I know of but one locality of its growth here. It is difficult to detach a root from the parent stock, but I find on trial it grows well from slips placed in a hot-bed.

Now while on this subject it may be worth while to ask why are not more of our own native flowering plants and shrubs cultivated among us; they grow more vigorously than most foreign species, and there are many of them which few of our own people ever see,

which adorn the gardens of the wealthy in Europe. I would only allude to a few as an example of the large class of numerous native species worthy of attention.

How many beauties we have in the single class of orchidacea. In it are the *Calypso borealis, Gymnodenia flava.* The genus *Cypripedium,* Orchis, Arethusa, Pogonia, &c. &c. The families *Liliceæ* and *Rosaceæ,* &c., afford many more beautiful species. Of the trees, shrubs, &c. my time will not at present permit any extended remarks. The genus *Staphylea* affords three species, one native of our country, the *trifolia,* one of the West Indies, one of Europe. Where is there a prettier ornamental shrub than our *Staphylea trifolia?* Its beautiful striated stalks, symmetrical shape, and inflated capsules of seeds, vigorous growth, and being uninfested by any insect, all recommend it strongly for cultivation in pleasure grounds. Of evergreens we have one which is common, but its capabilities are scarcely at all known, or its cultivation would supersede many others which make far inferior appearance. I mean the *Abies canadensis,* commonly called *hemlock* and *Spruce Pine.* In its native localities it is a fine tree, but when trimmed in and shaped into such form as it is capable of, [allowed to grow and develop freely on all sides. Ed.] it is one of the most beautiful of evergreens, and of all others, seems to me most worth cultivating; plants of it under four or six years of age, set out in March or April, make a good hedge, and it lives under other trees better than most evergreens, but for trimming in as symmetrical garden trees, or for ornamental single trees, its excellence consists, and plants not over three years old are best; as they are kept trimmed they become very compact, resembling the Irish Yew; although handsomer, have been mistaken for it.

The seeds of this tree are generally eaten by birds or more of them might be found. Their cultivation from seed requires particular management; they germinate well, but great numbers die. Can you oblige us with the result of some of your own experience.

Very respectfully yours, A. L. Munson, M. D.

A RURAL SKETCH IN THE SANDWICH ISLANDS.

BY W. H. J., PENNSYLVANIA.

Honolulu—.We let go anchor abreast of the town about 3 P. M., and were immediately surrounded by canoes and bum-boats, swarming with natives, who rushing up to us, pulled out what looked like diploma cases made of bambo, and handed us innumerable certificates of being good *washermen;* some of the papers stated that the bearers were arrant rogues, and would steal, cheat, and lie, and the scamps thought we viewed them as most exemplary characters.

Pushing our way through the crowd, and nearly deafened by their clamor, we were paddled ashore in canoes with outriggers to prevent their capsizing, and strolled through the town. The streets were filled with natives, some of them almost in a state of nature, and others well dressed; the women walked in crowds covered with garments tied about the neck and hanging to the ground, of cotton or flaring silk, resembling walking rainbows.

Hundreds of them squatted along the sidewalks on their haunches, which is the common mode of resting, jabbering and staring at the "Ouries" or foreigners.

Honolulu is a pretty city and the tropical plants hanging over the walls, and trees sheltering the sidewalks, give it a cool and delicious appearance; it having rained this day, everything looked fresh and green, the air delightful, and sweet odours filling the atmosphere.

Nearly all the squares are surrounded by mud-walls or sun-dried brick, the houses all standing off the streets. Some of the houses belonging to foreigners are beautiful, being composed of coral taken by divers from its bed in the ocean. The squares enclosed by the mud-walls are filled with grass houses in which the natives live, and are large, cool and impervious to rain and more preferable to live in, in this climate, than those constructed of any other material.

An extinct crater called the "*Punch bowl*," rises back of the city, and on its sides are mounted cannon, which command the place; within the crater is a beautiful valley, where multitudes of goats are continually grazing. The city is bounded by the sea on one side and lofty mountains on the other, while a low narrow valley leads from it through the mountains, making a splendid and much frequented drive, with handsome trees planted on each side, for seven miles, where the valley terminates in an abrupt, perpendicular precipice, called the *Pare*, over which KAMEHAMEHA the First drove thousands of his enemies down several hundred feet, and not a single one escaped.

KAMEHAMEHA the Third, lives in a fine large house, surrounded by a beautiful garden, and near him lives his mother, a great fat old lady with a suite of half naked natives always at her heels, dozens falling into the procession as she walks the streets. His Hawaiian majesty is a good looking, stout fellow, and sports a genuine Broadway mustache.

After spending the day on shore, we hunted everywhere for a house to rent, unsuccessfully, and a *Kanacka* or native, overhearing our conversation, accosted us with, "me find good house, no too much money," so we followed our sable mercury until we obtained a good house, in the centre of a square filled with trees and flowers, opposite the king's palace; here we soon established ourselves, and lived in a style of "oriental magnificence" (excepting the magnificence!) with nothing to do but send our "Tamarre" or servant up one of our cocoanut trees, and revel in the nuts and milk.

I was here enabled to add many tropical plants to my already large herbarium. Our landlady, being a chieftess, wanted to give me her daughter (aged 13) in marriage, but not being ambitious to become allied to the aristocracy, I respectfully but firmly declined.

The old lady had many visitors of the softer, if not the fairer sex, and if perchance we would be indulging in the luxury of a genuine oak-leaf-Havanna, or meerschaum, the ladies would stop and gently remove said luxury from our mouths, and much to our unsophisticated consternation, would take a whiff or two, and pass it around, then politely return it, with a grunt of approbation or a "miti," (good). These eccentricities we soon grew accustomed to, and soon learned to *rub noses*, and smoke the pipe of peace, when we wished to conciliate.

Yours, &c., W. J. H.

TANNIC ACID FOR STRAWBERRIES.

BY H., ALBANY, N. Y.

MR. DOWNING—I do not understand how tannic acid can be a specific food for the strawberry. This has been asserted by Prof MAPES, at a meeting of the American Institute Farmers' Club, and your correspondent, Dr. HULL, and yourself, allude to it in the August number of the Horticulturist. I do not doubt the good effects of mulching strawberry plants with old tan-bark—the question is as to the hypothesis by which the result is attempted to be explained. Is it *known* that the strawberry feeds on tannic acid? or on what is the assertion founded? So far we are without any clew to the "why and where-

fore" of Prof. M.'s idea, unless the statement of his—put forth at the same meeting of the American Institute Farmers' Club,—that "toads eat strawberries," is to be taken as an illustration. Perhaps it is held that tannic acid is a specific food for toads, and that the toughness of their skins is owing to the *tanning* they have undergone from the effects of that acid, contained in the strawberries the animals had eaten!

But does any one suppose that tannic acid exists in the strawberry? If it did, it would be an anomaly, as the malic, tartaric, and citric, are the distinguishing acids of fruits; and though I cannot refer to any chemical examination of the strawberry, it is reasonable to suppose that its acid is one of these. Tannic acid may, to be sure, exist in the stem and root, and so it does in many other plants, to which it has never been thought of applying it as food. Plants have probably the power of elaborating their own acids.

Again, is it even known that old tan-bark contains any appreciable amount of tannic acid? It is well known that tanners use it as long as any tanning "liquor" can be made from it, and it is only thrown aside as "spent tan," when the tanning principle has been thoroughly extracted. The acid which then remains is probably the gallic. The beneficial effects of the bark as a mulch, are probably chiefly mechanical—preserving the moisture and friability of the soil. When mixed with the soil, however, it decomposes slowly, and may thus form a source of carbonic acid, on which it is *known* plants feed. But its value as *manure* is little or nothing till its natural acid is gone.

Can a single instance be cited of the beneficial application of tannic acid to plants? As a general thing, we know there is nothing more unwholesome for them than astringent acids. For example, peat or muck, from hemlock swamps, (and sometimes from other localities,) frequently contains a considerable amount of tannic acid, and when first dug, it is not only valueless as food for plants, but positively *injurious*—turning the leaves yellow, and checking the growth. The substance does not operate as manure, till rain, frost, and air have dissipated the acid.

It is true that strawberries have been known to grow well in reclaimed bogs; so have Indian corn, potatoes, beans, &c.; but is there any more evidence that tannic acid contributed to the growth of the former than the latter? Neither will grow well, till the surface of the soil has become changed and *sweetened* by decomposing agents. Cranberries, however, grow naturally, on bogs, without any preparation of the soil; but it has ever been pretended that tannic acid was a specific food for this plant, and its sour principle is known to be *citric* acid. H.

Albany, Aug. 1, 1851.

Remarks.—It is we believe understood from recent chemical analysis that tannic acid forms a part of the strawberry *plant*, (not the fruit,) and it is upon this ground that it is considered especially beneficial to strawberry beds. From our own experience we cannot positively speak of beneficial effects from tan, considered as a specific manure. But as a *mulcher* we consider it by far the best we have ever tried for strawberry beds.

Prof. Mapes, however, in a conversation that we had with him a short time ago, assured us that he had watered his beds with diluted tannic acid with good results, and we hope he will give his own more complete experience for the benefit of our correspondent.

Tan-bark, *fresh* from the pit, does we think contain a considerable amount of tannic acid—as we have known it to injure very delicate plants, though robust ones do not mind it at all. Ed.

THE BEST WAY OF PRESERVING FRUITS AND VEGETABLES.

BY H., DAYTON, O.

YOUR June number has a communication from "L., of South Carolina," asking information as to the proper method of preserving fruits and vegetables, with the flavor of those freshly gathered.

Though too late for any fruit but peaches, or vegetables, except, perhaps, tomatoes, this season, I will send you the method I have successfully practiced for five years, in keeping gooseberries, cherries, plums, peaches, peas, Lima beans, green corn, and tomatoes.

Tin cans, of about three quart capacity, are a convenient size for an ordinary family; the hole in the top should be about three inches diameter, and the cover pierced with as minute a hole as possible. Fill the can with the prepared fruit, solder the top on, place it over the fire in a pan or kettle, containing water enough to rise within an inch of the top of the can, and heat until the contents attain the temperature of boiling water, then close the hole in the cover, and the *thing is done*.

For peas, Lima beans, and corn, I have found it better to manage somewhat differently, and I think cans of about one-half the size above, sufficient, for the reason that these last should be eaten directly after being opened, while the others may be easily kept a day or more in cool weather, if not all needed at once. Peas and beans are put in water and brought to the boiling point, then filled into the cans hot, sealed up, and the cans immersed in boiling water, where they should remain half an hour at least. Corn is treated in the same way, using milk instead of water—I do not know whether the cans filled hot need any aperture for the escape of air—this depends upon the *rationale* of the whole process. URE, in his Dictionary, suggests that its preservative property is effected by the small quantity of air which he assumes is retained in the can, becoming carbonized, but I think that where there is an aperture for the escape of the contained air, the steam from the water within will force out the whole of the air, so that the can, closed immediately and cooled, contains nothing but the fruit and its juice, or the vegetables, and the water or milk in which they were boiled. If the first explanation is correct, no aperture need be left, as there will be so little difference of temperature between the can full of heated vegetables, and the boiling point to which they are to be again raised, that there will be no danger of bursting the can; and it will avoid some trouble, for it sometimes exercises the patience and temper of an amateur tinker to close the can securely when hot, and the steam excited by the touch of the hot soldering iron—but if the latter be right, the hole in the crater must be made for the escape of all the air.

I am confirmed in the latter view from facts of my own experience. We sometimes put up fruit in glass or stone-ware jars, tied over with a double bladder. These are tied securely before they are heated, and of course contain air where not occupied with fruit—but we invariably find about half an inch in depth, from the top of the fruit, spoiled. This, I think, must be the effect of the small portion of air contained—but my facts, i. e. experiences, are probably more interesting than my philosophy, and they are impregnable.

In our community, *preserved* [I mean preserved in sugar or syrup] peaches, plums,—indeed the whole catalogue of these monsters of indigestion, are becoming "rara aves" before the economy and luxury of this *better* way.

I infer this will not meet your correspondent's views, who evidently expected to preserve his strawberries with the moisture of the morning dew gleaming upon their blushing sides, and his peaches with their bloom untarnished, but it is the next best thing, and

besides, the best now at our command, I mean we of the great public, for I believe there are some dealers who possess the art of preserving strawberries, and of course less delicate fruit, with the fresh flavor and beauty—and if we think it worthy commendation and premiums to originate a valuable kind in any variety of fruit or vegetables, would it not be worth while to offer a premium of corresponding value for the method of preserving the fruit of a week or a month, for enjoyment during the whole year, in its original deliciousness. If the secret could not be purchased at a reasonable rate of its present possessors, would not a premium of one or five hundred dollars encourage a competent and practical chemist (a spice of horticultural furor would be no disqualification for the task) to attempt its discovery. The "chicken in every subject's pot" would fade forever before *strawberries* at *Christmas*, without hot-bed or furnace, or the "*price* of a Knight's ransom." Yours, &c. H.

Dayton, O.

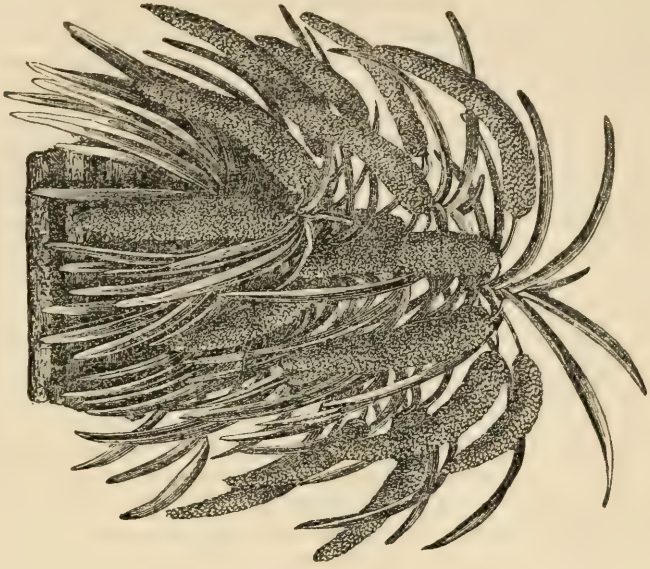
FLORICULTURAL PERFECTION.

THERE are few persons, even among our most experienced horticulturists, on this side of the Atlantic, who know to what perfection floriculture is carried in some parts of Europe, where certain plants are made the object of especial attention and admiration. Every one has heard of the Tulip and Hyacinth cultures of Holland, and the Rose culture of France, but no where are the entire perfections of floriculture carried to so high a pitch, at the present moment, as in Great Britain. In the first place, we must remember that gardening is the passion of many of the nobles and persons of the largest wealth in that kingdom;* in the second place that the gardeners are a highly intelligent reading class; in the third place that labor is comparatively cheap, and lastly that the prizes given at the great horticultural fetes have bro't all the best horticultural talent into a wide field of competition.

GARDENIA STANLEYANA.

The result of these various circumstances has been to make the two great horticultural fetes of England—those of the Horticultural Society and the Royal Botanic Society—the most wonderful sights, to a lover of horticultural skill, that the

* Mrs. LAWRENCE, the wife of an eminent physician near London, who is one of the most successful competitors at all the great shows, is said to spend $30,000 a year on her gardens.



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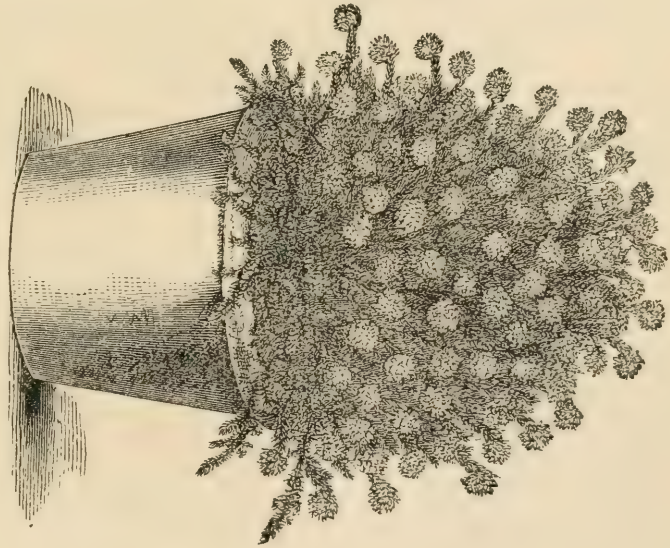


ERICA ELEGANS.

world has ever known. Although Britain is by no means a propitious climate, for fruit, (we believe VOLTAIRE said the only ripe fruit England yielded was a baked apple,) the displays of grapes, peaches, pine-apples, and other choice pomonal treasures, at these shows, are in point of size and beauty, if not in flavor, hardly to be equaled by any part of the world where these separate fruits grow naturally, with all the advantages of a genial climate.

Our attention, however, was most attracted by the specimens of exotic plants grown by the leading florists and gardeners, and shown at these exhibitions. Species, that we usually know only as lean and indifferent in habit—because all attention to high development is denied them, here showed the same superiority to the specimens as commonly grown, that a fine thorough-bred animal does over a lean, starved creature of the country stock. It was not merely that the flowers were finer, or the plants healthier, or the foliage fresher, but that the whole plant had been developed with a perfection of growth, symmetry, and luxuriance, that we had never seen elsewhere, and that, in fact, has never been seen until the last ten years.

We give, to illustrate our remarks, three very accurate portraits of rare plants shown at these exhibitions last year. Most of our readers, who have a taste for exotics, will understand at a glance how different these specimens, loaded with flowers at every point, fresh with health in every pore, are from the same things as most of us know them in our collections. It is one thing to be able to keep plants alive, and another to bring them to the highest development which art and nature conjointly make possible.

THE CURCULIO—VERSUS LIME AND SULPHUR.

BY THOMAS W. LUDLOW, JR., YONKERS, N. Y.

A. J. DOWNING, Esq.—As as it appears by a writer in the last number of the Horticulturist, that Mr. LONGWORTH, of Cincinnati, has not as yet succeeded in preventing the attacks of the curculio, and that his theory is wrong; that the instinct of the insect teaches it not to deposit its eggs in the fruit of trees paved underneath, or those leaning over water, or in any such situations, where its eggs cannot be hatched, or the grub protected during its transformation, I must beg him, as well as all the unsuccessful cultivators of smooth skin fruit, not to despair, for there *is* a remedy at hand, and a very simple one, too.

To wit—(for facts are all that are wanted in this matter,) having about twenty plum trees, which have blossomed freely for the last six years, but have never ripened any fruit, I was induced, by reading a notice in the Horticulturist last year, of the efficacy of lime, to try two trees, by syringing them with white-wash made of unslaked lime, with a *handful or two of flour of sulphur* mixed through it.

Just after the fall of the blossom, I observed that much of the fruit was stung. Then, in order to give the lime and sulphur a fair chance, I shook the trees, and gathered about thirty curculios, after which each tree was syringed with a pailful of white-wash and the above quantity of sulphur, which was repeated twice more, allowing three days to intervene between each application.

I am now happy to state, that one of the trees is so heavily laden with plums, that I will be obliged to prop the limbs. It is a common variety, but however, I invite all those who are inclined, to come and see it, as it is a rare thing in these parts, where even com-

mon plums are almost unknown. The trees stand in a soil the best adapted for the nursery off all kinds of insects, being warm, dry, and sandy.

I have observed that the syringing not only checked the ravages of the curculio themselves, but destroyed the vitality of their eggs deposited, and thus insures the fruit, even though it had the scar of the puncture already upon it. Truly yours,

THOS. W. LUDLOW, JR.

Yonkers, N. Y., August 12, 1851.

We are glad to get so straight-forward an account of a successful experiment, from a correspondent who is a pains-taking horticulturist, and whose accuracy may be relied on. It will be remembered that some of the lime-wash experiments have failed—but so far as we know, Mr. LUDLOW'S addition of sulphur is new, and may prove more effectual. ED.

ON EXPRESSION IN ARCHITECTURE.

BY S. H.—FROM THE LONDON BUILDER.

A GREAT part of the difficulty in reference to decorative expression arises from our contracting too much the field of our resources, from a neglect of many sources from which the fibres of architecture should be nourished. Egyptians, Indians, Greeks, Romans, Venetians, and our own mediæval architects, drew their inspiration from the highest fountains then open to them; and we see the poet and the orator ransack all nature, existing art, and science, for similies and metaphors wherewith to vivify their works. Now architecture, to be a living art, and reflect to posterity the divine of humanity, must do likewise: it must move with the general march of mind, and grow with the increase of knowledge: it must digest every improvement in science, and draw its vitality and power from every accessible source.

The entire language of architecture is really a copious one: all nature, animate and inanimate, and all extant art, offer themselves as models to the architect. The botanist, the geologist, the naturalist, the chemist, the archæologist,—all explorers and expounders of nature, of history, and of art, are, though they may not be aware of it, benefactors to architecture; but their gifts have been but partially applied to the enrichment of the poetry or the strengthening of the expressive faculties of the art.

Modern sculpture, as applied to architecture as well as sculpture generally, has, I am well aware, a different province to that of the ancients, which was to express the natural idea of their deities as promulgated by the poets, and which was conceived after the analogy of humanity. The Greek sculptures are hieroglyphics of Pagan theology: the gods of the Greeks partook of the character of men, and coming within the shade of human passion, and actuated by human motives, they admitted of personal representation. As we conceive of the Deity in a totally different manner, as filling immensity and "inhabiting eternity," no graven image, however warm with the fire of genius, will answer to our ideas. We must, therefore, be careful how we draw from heathen mythology for the embellishment and illustration of Christian churches.

Objects employed in Pagan rites are unfit emblems for such structures; but Christianity has its own subjects and sacred objects of illustration, which may be applied to the classic architecture as well as to the Gothic. In the sculpture, painting, stained glass, &c. of the middle ages, the patriarchs, apostles, and saints were distinguished by their peculiar attributes, or by some particular circumstance allusive to sacred history, just as

were the gods and heroes of antiquity. More rational and artistic compositions than many of these could doubtless be formed; but they might be made the basis of a system worthy of the present advanced state of art and religion. Surely Scripture yields a sufficient field for this, and sculpture could embody the sacred memories and associations of our religion,—the sublime personages of Bible history, as well as the myths and allegories of the ancients. For secular purposes, the case is different; and though faith has ceased to be exercised in the Thunderer of Olympus, and the empyreal conclave of subordinate divinities, yet a great portion of Greek mythology and allegory will apply to our general purposes; and, as far as they are so applicable, they are unimprovable. Their is something so exquisite in the conceptions of these ideal and figurative beings, which so beautifully personify the different qualities, physical or moral, that they represent,—their roots are so deep in nature,—that they must ever have a potent spell upon our feelings and imagination. For emblematic illustration, what could be superior to the attributes and emblems of the mythology? The helmet and lance were the symbols of war, and may be such while war continues. The lyre and laurel branch are still appropriate symbols of harmony and fame. The myrtle-branch and the dove were to characterise affection, and may still do so, as the palm branch and wreath may announce victory, and the olive, peace. Though symbols of a banished creed, do they not belong to humanity? No more natural and beautiful emblem of justice than the equal balance could be conceived: the hoodwink of Impartiality, the veil of Modesty, the bridle of Temperance, are unrivalled in their significant beauty. Festoons, wreaths, garlands, to whatsoever they owe their origin, have been universally received among cultivated nations as representative of certain ideas, and may still be so employed while art shall need them. Symbolism and allegory are a source that has been inadequately drawn upon in modern architecture: yet it is surely an artistic one. The Greek architecture spoke by it, and emblems were invented when ancient art had reached a high point of perfection. The trope and metaphor of poetry and Scripture are used on the same principle,—to illustrate and strengthen the intended idea. What striking morals are conveyed by allegorical persons and things in poetry! The destination of some buildings cannot be distinguished from that of others by an appeal to analogy alone, and therefore a further language is required; and here is one of almost infinite scope, that supplies genius with a boundless field of invention,—a rich and beautiful language, and, withal, a natural one, for we are instinctively prone to allegorise: personification is the natural language of feeling and imagination.

But whatever mode of illustration we adopt, we must not neglect our own national resources. In drawing from British literature and history, and embodying in stone the creations of our poetry, or the great historical personages of our country, we follow the highest ancient examples, and such subjects generally will be more interesting to English hearts than the brightest imaginings of Homer and Hesiod. Thus enriched, we should find no difficulty in characterizing our respective works. The destinations of modern edifices are not too numerous in their variety to be distinguished, when all our resources are drawn upon, and all our unwrought elements organized. The various arts and sciences,—the different virtues, have their respective natural emblems; the Romans deified all the virtues, and gave them their appropriate attributes, or distinguished them by their attire, and such creations we could not improve. The instruments used in the various arts and sciences have been employed on buildings as indications of their devotion to these arts, and they may be still employed with the greatest propriety. We do well to immortalise in stone the fading forms of nature; but artificial forms are often called for, and may not only be useful in expression, but conducive to beauty: many musical and other

art instruments are graceful in form, and, while so, they are, though the work of man, also reflections of the work of God.

The representing literally the use of a building by means of sculpture or painting, with a view to rendering the work completely phonetic, good taste, I think, would not sanction: the phonetic quality is not called for or desirable in architecture,—nor are painting and sculpture higher arts than architecture, from being phonetic: if they were, the lowest branch of literature might claim precedence of it. The subject of Paul preaching at Athens, on the facade, or in the pediment of a building, would speak plainly enough of Christian worship; but this mode of expression would be more prosaic than poetical, and would remind us too much of the significant hat or boot of colossal dimensions, that project into some of our trading streets.

I observed above that one style is better fitted for expressing a given character than another. Now, this peculiar and exclusive fitness for one purpose, eminently characterizes the Gothic or pointed style of architecture, which deserves separate notice here. The Gothic system is not what many of the advocates of the classic styles have asserted it to be,—an incoherent style, unnatural and false to principle, devoid of all harmony and proportions. Nor is it full of inconsistencies and caprices, as contended by others. Inconsistencies and caprices appear only at first sight, and to superficial or prejudiced observers. The great monuments of this style evince the most striking intention of purpose, and a power of expressive grandeur and sublimity in harmony with that purpose, which no other system could have secured. But Gothic architecture, notwithstanding, will never become the universal style. It is only adapted to the expression of qualities analogous to sacred uses, and will be the more sacred in its associations from being exclusively devoted to such uses. The cathedrals and churches erected during the Gothic period were exactly adapted to the Roman Catholic ritual—the form of devotion then in use, to processions and every other ceremony connected with the religious service of the day. Music, for example, was an important part of the service, and the cathedrals were built so as to give the finest effect to music: they were covered interiorly with sculptural and pictorial decoration in harmony with the spirit, and symbolizing the leading points of belief; and like the maze of material beauty in nature speaking also of the eternal splendor and sublimity. There was a completeness of adaptation, a conspiracy for the expression of one idea, perhaps never before or since exhibited. "Then," says Menzel, in his history of Germany, "the pile resounded and spoke, like God from the clouds, from its lofty tower, or alternately sorrowed and rejoiced, like man, in the deep swelling organ: the arts of the founder and musician were each devoted to the service of the Church." The Tudor style is suited to all buildings of a domestic character, but ecclesiastical Gothic, applied to civil or domestic purposes, is out of its natural element, and must present to the eye of taste inconsistency of the grossest kind. It can have no harmony or sympathy with ideas and enterprizes of earth, which it seems to spurn. It speaks not home to men's "every day business and bosoms." It is all-aspiring, like the flame, heavenward; and finds a solution of its mystery only in the faith that points to worlds

"Far above the clouds and beyond the tomb."

In respect of mere sensuous beauty, it (Gothic architecture) cannot compare with the Greek, which possesses the most exquisite adaptation of form and style to every variety of purpose; but I have spoken of it as regards its vitality and power and truthfulness to its original and peculiar purpose: as regards its application to ecclesiastical uses and power of analogous and symbolical expression, Gothic architecture is a perfect system; it fills a high and holy place in art, to which it is wonderfully, we might almost say divinely,

adapted; and I would have it respected like a thing set apart, and which nothing secular should profane. It must, however, be observed that for general purposes of expression, an architect need not fetter his genius to the particular mode or style of any age or country past or present. Indeed so fettered he cannot give suitable expression: his self-imposed manacles will be among the causes of his failure. On observance of distinct style beauty is not dependant, and an expressive character may be given without it: nay, architecture itself may be conceived of as distinct from style: style is the servant—an useful one—of architecture, but not its master. A building, I apprehend, might be so designed and erected as to exhibit no trace of any style known in the world, and yet be good architecture,—a real work of art. The circumstances of climate and situation under which an edifice is to be built, and its destined use, may be so peculiar as to dictate a form of structure and style of decoration differing from any thing existing; yet an unbiassed attention to such dictation might result in an artistic and meritorious production. It belongs to the very idea of a fine art as distinguished from the mechanical arts, to yield the utmost scope to the inventive faculties throughout; and the remark applies to architecture as far as consistent with the prior demands of utility,—the first law. The critic should therefore be taught to judge of architecture independently of style, and in reference only to philosophical, *i.e.*, abstract architectural principle. We should not consider whether two or more features we would wish to introduce into a design belong to one style, and were employed together in ancient examples; but whether they would naturally harmonize. With all due reverence for Italian architecture, I hesitate not to say, that as a style or system of architectural design, we have nothing to do with it. With its members, its mouldings, as with words, we have to do. We have to resolve it into its original elements, taking due advantage of what Italy or modern design has contributed to the general stock as additional words enriching and swelling the antique languages, for the expression of English ideas. Using it otherwise, might remind one of a tradesman or shopkeeper going to his brother trader instead of the merchant for his goods. We might as well take the French architecture, or the Spanish modification of the classic: the error, different indeed in degree, would be the same in kind. Why use a translation when we can read the original? Or go to a derived system, when we can have access to the parent source?

But whatever the style, or whether we have style or not, the present purposes of our buildings, be those purposes what they may, must govern the form or plan, which should be precisely what the purpose requires,—adapted to situations and circumstances without reference to the associations of past art, or the requirements of deceased institutions. The signs of language or elements we use, must be employed not in repeating ancient thoughts, and feelings, and purposes, but in clothing the ideas of to-day with a material form. The purpose or destination is to a building what the subject or fable is to a poem, and like the subject in the poem, this purpose should thrill, as it were, through every part, and beam from every feature. The idea of its design must be conceived in accordance with our habits and manner of life, customs, worship, &c., according as it is public or private, and that idea of its use or destination must pass like a spirit into the building, and pervade and animate it. Art owns nature and reason, not precedent, for her law-giver; "it is not metre, but a metre-making argument, that makes the poem." Nor is it columns and entablatures, nor arcades and buttresses, that constitute architecture. "For works which are the result of the mere connexion of even beautiful forms," observes a German writer on Art, "would themselves be without all beauty, as that which gives beauty to the whole cannot be form. It is beyond form—it is the essential, the universal, the aspect, and expression of the indwelling spirit of nature." S. H.

ON RENOVATING OLD PEAR TREES.

BY A BOSTON SUBSCRIBER.

Dear Sir—Many of your readers living in the sea-board states, have in their gardens old pear trees of fine sorts, principally St. Michels, Butter pears, St. Germains, or other well known varieties, that have fallen into disrepute. The reason of this, as most of the writers of the day affirm, is, either that the varieties are worn out, or else the soil is exhausted of the food that once enabled these trees to bear such fine crops of beautiful pears, as they were once in the habit of doing, annually.

I suspect there is some truth in both these conjectures. In other words, I do not believe the fine old pears, such as the St. Michel and St. Germain, can by any process be restored to precisely the same state of health and productiveness that belonged to them forty years ago, in this part of the country; but at the same time, I think it can be easily proved that they can be made productive, and that a worn out soil is practically the cause of much of the degeneracy which we see here among the fine old pears.

Your readers will no doubt remember some brief directions which you gave in one of the early volumes of the Horticulturist, for renovating old pear trees. As several of my acquaintances in this county have tried the experiment, and as I have myself, dabbled a little in the matter, I hope you will allow me to make a few comments, with a view to contributing something to the stock of useful knowledge on this subject.

The principle assumed in the directions given to renovate old pear trees, is, that the soil of our worn out fields and gardens, has become deficient from long cultivation, in the mineral substances needful for the perfect growth of the fruit. These substances are especially lime, potash and phosphates. In order to supply these deficiencies, it was recommended to apply liberally, lime, ashes and bone dust. This was coupled with directions to add fresh soil, rejecting the old soil, and a considerable quantity of animal manure.

As many persons like to get at a given object with as little trouble as possible, they have doubtless failed in recovering old pear trees, because they have trusted solely to a liberal *top-dressing* of the said ashes, lime and bone dust. Such top-dressing will, of course, benefit a young and healthy tree—but they are by no means sufficient to renovate one that has stood in the same place for twenty or thirty years—and exhausted the soil as far as the roots extend, of not only the necessary mineral, but also animal or vegetable matters. I will recount the treatment of three trees that have particularly come under my own inspection, to illustrate this position, as well as to show the real value of the mineral manures.

These three pear trees were all of the St. Michel or Doyenne variety. They stood on the north side of an old kitchen garden—were all about twenty-five years old—had borne many good crops of fruit—but had cracked and failed for ten years past.

To begin, all these trees had trenches dug round them, and the roots were partially laid bare of the old soil.

The first one, (which I shall call No. 1,) had good soil put back, mixed with half a bushel air-slaked lime, two bushels ashes, leached, and half a peck of bone dust.

No. 2 had no lime or ashes, but about three cart loads of strong stable manure incorporated with the fresh soil that was filled in the trench and about the roots.

No. 3 had the same quantity of lime, ashes and bone dust, as No. 1, and the same quantity of stable manure as No. 2.

This is now three years ago. All the trees have greatly improved. No. 2, which had only manure, has made a good growth, but the fruit is still imperfect. No. 1, which had only the mineral manures, bears much better fruit than it formerly did, but the tree is not vigorous. No. 3, which had a plentiful supply of both mineral and animal manure, is not only very much the most luxuriant tree, but is loaded with a crop of St. Michels that reminds me of "old times."

Does not this experiment prove that to renovate an old pear tree, it is not sufficient to give it lime, potash, and the like? I think so. But there are other points which are worth a moment's attention.

The first is, that an old tree, with stunted short branches, which have grown perhaps only two or three inches per annum, for five years past, is not in a condition to be roused into healthy growth, even by both kinds of manures. For such a tree, it is necessary to use the *knife*, in order to force the tree to *re-act* or rouse itself a little—to make new wood —to put out fresher and larger leaves—in short, get up a new set of sap-vessels at the extremities, which are not so choked up and sluggish in action as the old stunted ones.

The right way to do this is to *shorten-back* the ends of the limbs—say from six inches to a foot, all over the tree. The more the tree is stunted—the more it should be cut back. But never "trim out" the large branches of an old pear tree severely—as this often has a tendency to cause the fire blight. The shortening-back may be done in early autumn or spring. I prefer March. The best time for the "renovating" is in the autumn.

The second point, is to keep the tree well *mulched* over the surface of the ground that covers the roots. The best things for this purpose I believe to be salt-hay—or tan bark. It should be spread as far as the roots extend—or better still, half as far again. The roots of trees actually *luxuriate* in the cool and moist soil that is always to be found under the mulching—even in this hot and dry season, when otherwise, the top soil would be as parched as powder.

Although I have given you but three examples of pear trees *renovated*, I have seen several others which go to illustrate with greater or less force the facts I have stated. The older and more stubborn the subject, the more it becomes necessary to give it a very liberal supply of both animal and mineral manures. But once applied in the manner I have directed, it will not probably be requisite again for several years, or perhaps an annual top-dressing of the same substances would be sufficient for a long time afterwards.

I am sir, yours, A Boston Subscriber.

Boston, Aug. 1851.

We thank our Boston Subscriber for his practical communication, which we cordially approve. Old pear trees that have become barren, need an abundant supply of animal manure as well as mineral, to rouse them into a state of renewed growth and fruitfulness. We were present lately at a discussion which took place respecting the application of substances to renovate old pear trees—in which one of the experimentors declared his utter failure and want of faith in any such results. Another gave an account of a fine old tree most completely renovated by a plentiful drenching of the soil about its roots with "*bullock's blood*," one of the most powerful of manures, containing both organic and inorganic food for plants. Ed.

STUDY OF PARK TREES.

[SEE FRONTISPIECE.]

THERE is as much difference between a wild *forest* tree and a *park* tree, as between a wild horse and the finest trained Arabian courser. Full, as our forests are, of native trees in the richest variety to be found on the globe, but few Americans are familiar with the beauty of finely developed trees. Even in our ornamental grounds, it is too much the custom to plant trees in masses, belts, and thickets—by which the same effects are produced as we constantly see in ordinary woods—that is, there is picturesque intricacy, depth of shadow, and seclusion, growing out of masses of verdure—but no beauty of development in each individual tree—and none of that fine perfection of character which is seen when a noble forest tree stands alone in soil well suited to it, and has "nothing else to do but grow" into the finest possible shape that nature meant it to take.

One sees such trees, to be sure, occasionally, all over the country. Witness the elms of the Connecticut valley, the maples of the Housatonic, the tulip trees of Pennsylvania, and the oaks of Western New-York. But there are two places where this kind of park-like development of trees, is most perfect and complete.

The first is, in the English Parks—those broad grassy surfaces, studded with scattering trees and groups of trees—hundred of years old—many of them allowed to grow into the most beautiful forms that nature has impressed into their organization, and spread out into the richest drooping umbrageous heads of foliage that so favorable a climate for their growth can beget.

The other position is in the *natural parks* of America—the oak openings of the West—where, over a gently rolling surface of thousands of acres, you see grouped, precisely as in an English Park, but sometimes on a still grander scale, the noblest trees—now singly, and now three or four, or half a dozen together,—trees, each one of which would have been chosen by CLAUDE as a study for the foreground of his wonderful landscapes—which are the master-pieces of slyvan beauty. Nearer home, such a growth may be seen in the meadow park at Geneseo,—the WADSWORTH estate, previously described by us—where are as fine oaks, by hundreds, as are to be found in any park in England.

It is remarkable, that these grand parks of America, and the best specimens of English taste in Landscape Gardening, should be such close counterparts of one another. And though a man may have room to plant only half a dozen trees, yet he should study such examples as a sculptor would study the APOLLO or the VENUS—to make himself familiar with that high-water level of the beautiful in form, where both art and nature meet and become identical.

Review.

THE AMERICAN POMOLOGIST: containg finely colored drawings, accompanied by letter press descriptions of Fruits of American origin. Edited by Dr. W. D. BRINCKLE. Published by A. Hoffy, Philadelphia. ($2 a number, quarterly—$8 a vol.)

Those who remember Mr. HOFFY'S colored serial of Fruits, of which only a few numbers were issued in Philadelphia, some five or six years ago, will recognize the prototype of this new work which has just issued from his press in Philadelphia. It is a quarto

number with plates, showing thh specimens of fruit with their wood and foliage attached, lithographed and colored by Mr. HOFFY, in very good style.

The new features which entitle it to favorable consideration, are two. The first, that it is devoted wholly to Fruits of *American* origin, which will commend it to all those who, like ourselves, have *faith* in the products of our own soil as best adapted to this climate; and second, that it is edited by Dr. BRINCKLE, one of the most zealous and accomplished of the amateur pomologists of the country.*

The first number contains the Brandywine, the Moyamensing, the Petre and the Pennsylvania Pears: the Republican Pippin, the Eliza Peach, the Burlington Apricot, Wendell's mottled Bigarreau Cherry, and the Wilder and Cushing Raspberries. A plate is given of each variety, and the letter press, though very brief, is perhaps sufficient for a work which presents a full portrait to the eye of the reader.

We beg Dr. BRINCKLE in this work, which promises to become one of value, to adopt the classification of fruits, as respects *quality*, which has been established by the Pomological Congress, viz: *good, very good, best.* It is impossible for the general reader, from his description of the varieties figured, (and the fault is common to most books or prints) to tell what is the real rank of the variety. The Pennsylvania pear for instance—a sort which we (and most other northern pomologists) have fruited and rejected, is set down with the single remark as to its flavor, that it is "highly perfumed." This is quite true—and yet it is no less true that, compared with the standard, it will *not* rank as a "good" pear.

The work is one which will commend itself to pomologists and fruit growers, and its appearance is the best proof of the steady progress of fruit culture in the United States.

* We are only sorry to observe that the Doctor says, in his preface, he is in no way connected with the profits of the undertaking—it is wholly a labor of love with him. We only regret this because we have generally found that what is not worth paying well for, is not worth doing so well—especially if it has to be done month after month, and year after year. We trust our friend will prove the rule has exceptions.

Foreign and Miscellaneous Notices.

PHILOSOPHY OF MANURES.—It is an excellent custom in certain foreign countries, and one which leads to very valuable results, to send from time to time scientific men to travel in the various neighboring kingdoms; they are sent with a specific object, they carefully investigate the matter to which their attention is directed, and on their return, they make a report to the government who sent them, embodying the facts which they have collected in their travels, and the conclusions at which they have arrived; these reports, which are generally drawn up by men eminently well qualified for the task, often present better and more impartial views of the particular manufactures of the kingdoms so visited, than could possibly be prepared by any one residing in them. There is a good illustration of the truth of this, in the skilful reports lately drawn up by M. PAYEN, by desire of the Minister of Agriculture and Commerce of France, on drainage, the use of peat, and the employment of artificial manures in England. These reports, written by an excellent observer, one who is intimately acquainted with all the various departments of scientific agriculture, and the economy of vegetation in general, are of the highest interest and importance.

If, however, a stranger visiting England for such a specific purpose, comes with the advantage of an unprejudiced and unbiased judgment, he has at the same time, the disadvantage that he does not always know in how far he may safely rely on the statements which are made to him, and he therefore runs considerable risk of being misled by false or erroneous information. The conclusion which M. PAYEN appears to have arrived at, from a very careful study of the present state of the manufacture of artificial manure in England, and of the results of

numerous experiments on the practical application of those manures, might probably be expressed as follows. A dozen years ago it was stated by LIEBIG and his followers that the great object of all artificial manures was to supply certain inorganic matters to growing plants. It was asserted that soils became exhausted from the abstraction of potash, phosphoric acid, and soluble silica, and it was therefore said that manures were chiefly valuable in proportion to the quantity of those substances which they contained. The experience of the last few years has, however, shown that this is not really the case, for the most careful and satisfactory experiments have proved, that soils are very seldom wanting in the inorganic elements of plants, such as phosphoric acid and alkalies; but that they are often deficient in nitrogen, in a state capable of being assimilated by plants. In other words, that ammonia and nitric acid are far more important components of manure than phosphoric acid or alkalies.

That LIEBIG did, at one time, attribute very great importance to the earthy and alkaline parts of manure, no one will deny; and, indeed, it is evidently proved, by the fact that he even became the originator of a patent mineral manure, which, as PAYEN remarks, has for the most part been found of comparatively little real value. If, however, it is acknowledged on the one hand, that the value of these inorganic manures has been over-rated, it must, however, at the same time be admitted that there are circumstances under which they produce very remarkable effects; and that even though it is proved that they are not the only things necessary to the growth of plants, or the only things which the cultivator has to add to the soil, it does not, therefore, follow that they are of no value at all; and we ought to take care that in acknowledging our error, we do not fall into the opposite extreme.

It has been all along known, that the very best manures were those which contained a mixture of organic and inorganic matters; substances such as common farm-yard manure, consisting of decomposed and decomposing animal and vegetable materials, intimately mixed together. The error which has been committed consisted in the attempt to compare perfectly different and opposite things; and to decide which of the two was the most important. The alkalies and phosphoric acid are, no doubt, quite essential to the growth and well-being of plants; but so also are ammonia, nitric acid, and the various other sources of nitrogen. To attempt to compare the two kinds of food, is pretty much as though we were to try and compare together meat and bread, as articles of animal food; both are valuable, and the two taken together are more valuable than either taken alone. So it is with plants; it is of no use attempting to determine whether ammonia or alkaline phosphates are the most important, as constituents of manure; they serve very different objects in the nutrition of plants, and when the one is required, it is certainly idle to attempt to supply its place by giving more of the other.

There are a number of curious experiments which have at times been quoted, as proving that the organic part of common yard manure is of no value; and that its virtue consists entirely in the inorganic salts which it contains. Thus, for example, it has been stated, that on manuring two equal pieces of ground, the one with a certain weight of good farm-yard manure, and the other with the ashes of an equal quantity of the same manure, no difference could be subsequently observed between the crops raised on the two fields. The truth of this, again, has been called in question by other experiments, the results of which were just the reverse; and those who attempted to draw general conclusions from the two experiments, were at last fairly puzzled how to reconcile two apparently diametrically opposite statements. The real cause of the difficulty, however, was simple enough; it arose merely from the attempt to compare together dissimilar things, which, from their very nature, could not fairly be contrasted with one another. If we admit that which is now pretty well generally acknowledged, namely, that all plants, in addition to certain other substances, require both ammonia and also alkaline phosphates, it is very easy to perceive, not only that a manure containing both those substances must be generally valuable, and therefore more certain in its effects than a manure which contains only one or the other; but also that such a manure would act in a very different manner on different soils, and applied to different plants. For example, good farm-yard manure, applied to a soil rich in earthy phosphates, and abounding in bone earth, will, nevertheless, be found to do good and cause the plants cultivated in it to grow with increased vigor and luxuriance; not because of the phosphoric acid which it contains, but chiefly from the presence of a certain quantity of ammonia, nitric acid, and matters capable of yielding those substances by their putrefaction. Nevertheless, the same manure

applied to a soil containing no phosphoric acid, but artificially supplied with salts of ammonia, will also be found to act beneficially; in this case it is not the ammonia, but the phosphoric acid of the manure, which is of importance. Or, if in place of applying a mixed manure, such as we have imagined, to these two soils, we were to take simple chemical manures—say phosphate of lime and sulphate of ammonia, we should probably find, that upon the one soil the phosphoric salt was the best manure, whilst upon the other the salt of ammonia would produce the best effect. It is plain, then, that the value of these different elements of manure must depend on the wants of the plant, and on the capabilities of the soil.

The conclusion, therefore, to which M. PAYEN arrives, namely, that the mineral manures, consisting chiefly of phosphate of lime, and containing little or no organic matter, are of comparatively trifling value, and that they act so slowly as to be of small profit to cultivators, is perhaps rather too sweeping a condemnation. Undoubtedly they will not supply the place of ammonia, but at the same time they are valuable manures, and on certain soils the cost of their use is amply repaid, especially when they are employed in conjunction with animal or ammoniacal manures. In the composition of artificial manures, M. PAYEN fully admits the value of sulphuric acid as a solvent of phosphate of lime; and he insists strongly on the great practical value of charcoal when associated with rich animal manures.

In concluding his report, M. PAYEN well observes, that there is one thing wanting which would be a very great aid to the cultivator, and that is, that all artificial manures should be designated by plain and simple names, expressing their real nature, and that their exact chemical composition should be honestly stated, as their purchasers would be no longer deceived by mysterious names, or misled by vexatious uncertainty as to the real value of the manures they buy. On this point there can be no doubt as to the evil, though the remedy may not be quite so clear. Perhaps the best advice which can be given is this—buy only of respectable dealers, and do not be deceived by *cheap* manures; if you are tempted by what is termed a bargain, you are pretty sure to suffer in the end; good manure is well worth its fair market value; the trash which dishonest dealers sell you is often not worth having as a gift.—*Gard. Chronicle.*

WINTER GARDEN IN THE CRYSTAL PALACE.—Shall we keep the Crystal Palace? says "DENARIUS." What is to become of the Crystal Palace? asks Mr. PAXTON; and the same questions are daily put by thousands of voices, less powerful but not less earnest. As yet no answer has been given, and probably no answer will be given till the public has more generally expressed its own opinion. Let us then endeavor to point out to those who do us the honor to read our columns in what way this question strikes us.

"DENARIUS" believes that the building may be applied to various scientific uses, that it may become a great gallery of sculpture, a winter garden filled with fountains, and groves of Orange trees, a gymnasium where science and art may unite in friendly contest, where schools and lectures would naturally arise, and where periodical exhibitions would be held of silk-weaving or cotton-printing, and the manufactures which give their names to the great City Corporations, the Goldsmiths', the Ironmongers', the Mercers', the Dyers', &c. "If the place," he says, "were recognized as a receptacle for plants and shrubs, it might be expected that in a very short time it would be well furnished with public donations. Proceeding with the development of this idea more in detail, it may be pointed out that the nave and the aisles 48 feet wide, would give a space of 10 acres independently of the galleries, which would give in addition, walks exceeding a mile. The ground floor might be used for plantations and sculpture, the galleries for potted flowers and smaller works of statuary; but care should be taken to consider the promenade as the chief feature, and not to occupy too much space with the collections. The public would desire to have walks among flowers and plants—not flowers and plants with some walks. This last kind of treatment belongs to Kew and Chiswick, and the Regent's Park. Spaces at the extreme sides of the building might be kept vacant to be applied to various public purposes, such as periodical exhibitions of agricultural produce, colonial raw produce, machinery, perhaps models of objects claiming patent rights, manufactures, and fine arts."

These ideas he, however, as we understand him, only offers as "supplementary to the great object of a winter garden;" and we are bound to say, that we doubt the wisdom of carrying them out, even if it were possible.

Mr. PAXTON, whose pamphlet we reprint in another column, entertains different views. He would have a garden or park, and noth-

ing more, embellished with birds, and flowers, and trees, and sculpture, displayed in a climate temperate at all seasons. HIC VER PERPETUM would be inscribed above his portals, and the scene within them would be that of a noble "park, decorated with the beauties of nature and art, under a sky-roof, having a climate, warmed and ventilated for the purpose of health alone, furnishing, close to their own firesides, a promenade unequalled in the world, and, for the six winter months, a temperature analogous to that of Southern Italy. Beautiful creeping plants might be planted against the columns, and trailed along the girders, so as to give shade in summer, while the effect they would produce by festooning in every diversity of form over the building, would give the whole a most enchanting and gorgeous finish."

Are these visions capable of being realized? That is the question which it really interests us to answer. The funds and means out of which a reality may arise are subordinate considerations, especially since the building, the main feature in any calculation of cost, may be said to be already paid for.

That all which Mr. PAXTON proposes to do may be easily done, no one acquainted with gardening will doubt; that the climate of Naples or Madeira may be secured to Hyde Park by means of the Crystal Palace, is as certain as the existence of those two countries. All we require in order to accomplish such an end is a heating power, which will exclude frost in winter, and a water power which will exclude drouth in summer. The rest is simple. That the great engineers who put together the vast fabric can water it and heat it, nobody doubts; that plants will thrive in it if heated and watered, we all of us know perfectly well.

But would such a winter garden be attended by the advantages that are expected from it to public health and convenience? That is to say, would it be agreeable to ride and walk under shelter while rain or snow is falling all around? Would it be comfortable to have a cool garden of 18 acres as a place of resort in the dog-days? Have dust or mud irresistible attractions to us English? These are matters of taste which all men can judge of for themselves.

If we look at the matter as it affects the value of contiguous property, then such questions as the following arise. Would it be advantageous to the neighborhood to be within a few minutes walk of Naples or Madeira? Would invalids find any comfort therein? Would the aged and infirm? And if health and comfort should be increased by turning the Crystal Palace into such a place as Mr. PAXTON contemplates, would the value of houses and land at Knightsbridge, Kensington, Brompton, and Bayswater, rise or fall? The owners of property there will probably express their opinion as to those points.

Should all these questions be answered in the affirmative, (and who can doubt it;) if the comfort, the health, the enjoyment, the wealth of the metropolis would be thus largely increased, by converting the Crystal Palace into such a park as could only be naturally found in Portugal or Madeira, then the last inquiry that we should make would be, WHO WILL RECOMMEND ITS REMOVAL, when a short Act of Parliament shall be introduced to enable it to remain where it is?—*Gard. Chron.*

WHAT IS TO BECOME OF THE CRYSTAL PALACE?—The time is approaching when the World's Fair will terminate, and the vast roof under which it is held, being no longer required for that purpose, must, according to the terms of agreement with the Commissioners of Woods and Forests, be removed; and, by this time next year, the ground is to be made as smooth, and the grass is to look as green, as before the 25th of September 1850. The exhibited articles will all be removed, and many of them will be looked upon as precious relics, connected with an event, the greatest of our times, and they will be cherished more and more as they become separated further from the day of their great triumph, whilst the building (I hope I may say without vanity)—the great feature of the Exhibition—must, if removed, be either transported to another country, or be rent asunder and dispersed in fragments to perform a variety of inferior offices. Now, if I can show—as I believe I can—good reasons why the structure should remain standing, I trust the Royal Commissioners will do all in their power to further that object.

Apart, then, from all thoughts of its present use, and also from all those considerations which fairly entitle it to great attention—the building, I would suggest, should be allowed to remain standing, on account of its peculiar fitness to supply a great public want, which London, with its two and a half millions of inhabitants, stands most essentially in need of—namely, a *Winter Park and Garden* under glass.

When I determined on sending in a design for the Glass Palace, I had in view quite as much the after purpose for which the build-

ing could be adapted as the object then more immediately required; and, in my original prospectus, I prominenty mentioned the fact, as one which had received a large share of my attention. Since that day nothing has transpired to alter my views, but, on the contrary, everything has contributed to strengthen and establish them, and to further convince me, if such further conviction had been needed, how valuable an appendage to this great metropolis would be a large national place of recreation and instruction, such as I propose.

Within the last twenty years, the physiology, economy, and requirements of animated nature, with the effects which climate, locality, and various contingencies have upon their health and habits, have been studied and examined, with the best results. Geology, closely connected with the study of plants, has, in its wondrous discoveries, unfolded to our view the mysteries of ages long gone by, when the earth's inhabitants differed widely from those now seen occupying its surface; of these no recorded history furnishes us with particulars, and but for this science we must have looked back thro' the thick mist of time, with scarcely a glimmering of light to guide us. By the aid of chemistry and botany many useful discoeries have been made, which practical horticulture has rendered subservient to the comforts and happiness of man; and the removal of the duty on glass has given an impetus to this science which only a short time ago no efforts could possibly have called into action; indeed, had that duty still existed, no building such as I am now treating of could possibly have been erected, and without an extensive use of glass, to equally admit and diffuse a subdued light, no such displays as at present could have been secured.

The achievements of horticulture, however, do not stop here, or merely consist in what has been accomplished within the great exhibition building, where dry and polished articles and the most tender fabrics may be safely preserved; but it leads onwards to the formation of climates, which even under opposite influences are rendered healthy, and suited to the wants and requirements of man. Formerly, wherever plants were congregated beneath a glass structure, the atmosphere was invariably deteriorated, and rendered unfit for being more than transiently inhaled; the usual method with visitors being to take a hurried view of the chief beauties within, and then retire to a more genial air. But now plant-structures are no longer unhealthy, pent up ovens; although the immense variety of objects they contain form a remarkable contrast with the meagre appearance of former collections, yet these objects are seen growing with an ease and natural vigor which, with the limited knowledge and means we possessed formerly, it was impossible to imitate. The ventilation and climate of our dwelling-houses have also been considered, and many additions to our comfort have in this respect been made. The perfection of these internal arrangements, contrasted with the atmosphere without, renders it still more desirable that something on a large scale should be done to counteract the effects of the outer air, which, in this country, and the neighborhood of London especially, is often during many months in the year impure, murky, and unfit for healthy recreation and enjoyment; and it is to meet this want that I offer the present recommendation. All hitherto erected structures, however great and noble some of them are, fall far short of answering this end, and I cannot but recommend, now that we do possess a building like the Crystal Palace, which in its dimensions is the best adapted for such a purpose of anything that has been hitherto attempted, that it should be so appropriated —and especially as its peculiar site between Hyde Park and Kensington Gardens is the best spot that could have been selected; connecting as it does those two great promenades—it appears exactly calculated to concentrate beneath its roof the pleasures of both.

A building like this, if properly laid out, will open a wide field of intellectual and healthful enjoyment; it will likewise, I hope, stimulate the wealthy in large manufacturing towns to a similar adoption of what may now be raised so cheaply; and when judiciously furnished with vegetation, ornamented with sculpture and fountains, and illustrated with the beautiful works of nature, how pure, elevating, and beneficial would its studies and exercises be. At present England furnishes no such place of public resort, for although Kew has a splendid Palm-house, where daily are congregated a great number of individuals, yet its warm and humid atmosphere is only calculated to admit of visitors taking a hasty view of the wonders of the tropics, as they pass in their walks through the gardens. On the contrary, in the Winter Park and Garden I propose, climate would be the principal thing studied; all the furnishing and fitting up would have special reference to that end,

so that the pleasures found in it would be of a character which all who visit could share; here would be supplied the climate of Southern Italy, where multitudes might ride, walk, or recline amidst groves of fragrant trees, and here they might leisurely examine the works of nature and art, regardless of the biting east winds or the drifting snow. Here vegetation in much of its beauty might be studied with unusual advantages, and the singular properties examined of those great filterers of Nature, which during the night season, when the bulk of animal life are in a quiescent state, inhale the oxygen of the air, whilst in the day, when the mass of animal existence have started into activity, they drink in the carbonic supply, given out by man and animals, which goes to form their solid substance, at the same time pouring forth streams of oxygen, which, mingling with the surrounding atmosphere, gives vigor to man's body and cheerfulness to his spirits.

In this Winter Park and Garden, the trees and plants might be so arranged as to give great diversity of views and picturesque effect. Spaces might be set apart for equestrian exercise, and for carriage drives; but the main body of the building should be arranged with the view of giving great extent and variety for those who promenade on foot. Fountains, statuary, and every description of park and garden ornament, would greatly heighten the effect and beauty of the scene.

Beautiful creeping plants might be planted against the columns, and trailed along the girders, so as to give shade in summer, while the effect they would produce by festooning in every diversity of form over the building, would give the whole a most enchanting and gorgeous finish. Besides these, there might be introduced a collection of living birds from all temperate climates, and the science of Geology, so closely connected with the study plants, might be illustrated on a large and natural scale, thus making practical botany, ornithology, and geology, familiar to every visitor.

The alterations necessary to the building itself, to produce the effects I have suggested, would not be many or cost much money. Shortly will be published by me a view showing how the whole may be finished so as to do away with all idea of smoke, chimneys, or other kind of nuisance. The details of the alterations necessary I do not propose to treat of now; but I may mention, for the information of those who live opposite the Crystal Palace, that I should recommend the wood boarding round the bottom tier of the building to be removed and replaced with glass; the present appearance of it is heavy, and gives anything but the idea indicated by its name; when glass is substituted for wood, the appearance will be marvellously changed; those who drive and ride in the park will even in winter see the objects within as they pass by, and the whole will have a light aerial appearance totally unlike what it has at present. In summer I should recommend the whole lower glass tier to be entirely removed, so as to give, from the park and the houses opposite the Palace, an appearance of continuous park and garden. Here I must state what I believe will be the position of those who live opposite the Crystal Palace. I fully admit they have just cause of complaint by having all the turmoil of so vast an undertaking as the great exhibition developed under their eyes and ears, with all its attendant inconveniences; but if the building is allowed to stand, and be adapted as I propose, the advantages derivable to them will fully compensate for all the evil they may have sustained in that respect. The boarding being all removed and glass substituted, they will have, within a few minutes' walk, a beautiful park, decorated with the beauties of nature and art, under a sky-roof, having a climate, warmed and ventilated for the purpose of health alone, furnishing, close to their own firesides, a promenade unequalled in the world, and, for the six winter months, a temperature analogous to that of Southern Italy; and I have no doubt the property in that immediate neighborhood would, from such an arrangement, considerably advance in value, because of the recreation and exercise afforded to the inhabitants and their families.

The advantages derivable from such an appropriation of the Crystal Palace would be many, and may be thus summed up. In a sanitary point of view its benefits would be incalculable. By its various objects it would produce a new and soothing pleasure to the mind. The great truths of Nature and Art would be constantly exemplified. Peculiar facilities would especially be given for the development on a large scale of the sciences of Botany, Geology and Ornithology. A températe climate would be supplied at all seasons. Taste would be improved by individuals becoming familiar with objects of the highest order of Art, and by viewing the more beautiful parts of Nature without its deformities. Pleasant exercise could be ta-

ken at all times, and in every variety of weather. It would serve as a drive, for equestrian exercise, for a promenade, or lounge, and as a place which could at all seasons, be resorted to with advantage by the most delicate.

Although the Crystal Palace at present, with its magnificent display of useful and ornamental articles, is truly wonderful, yet if the building be converted into a Winter Park and Garden, and arranged as I propose, I feel confident it would become a still more extraordinary and beautiful object. These things all considered, I cannot help expressing an earnest hope that the building will be allowed to stand, and be converted to so laudable a use. The cost of forming it in the first instance, must entirely depend upon the extent to which my proposition is carried out. Should it be decided for the building to stand, and be so appropriated, a calculation of the cost could readily be given.

I have, however, thought it right to state what I believe would be the annual outlay, if the whole were kept in first rate condition and constant repair; of course, a less sum would be required if a high standard was not aimed at; and this yearly sum might be obtained either by a national grant, or by making the building itself self-supporting.

ANNUAL EXPENDITURE.

Labor, fuel, water, implements, gravel for walks, feeding and attendance, to birds, and general superintendence,.....	£8,000
Besides the above, constant painting and renewal would be required; for this a reserve fund should be provided, and by which the building might be renewed forever, ...	£4,000
Making a total of.....	£12,000

—*Joseph Paxton.*

SOME FACTS ABOUT THE ACTION OF COLD ON PLANTS.—Facts, however trivial in themselves individually, become in the aggregate of immense value in building up a theory or illustrating a practice; for we must recollect that a theory is as often the child of experience, as that practice is illustrated by it, although such may not appear evident at the moment. The action of cold on plants is of vital importance to the practical gardener, as well as interesting to the natural philosopher. The relation of temperature to the healthy development of vegetable life, is as yet but imperfectly understood. Every day, however, adds useful knowledge on this head to our acquired stock. In the early spring of 1846, a quantity of Geraniums and other soft wooded plants were despatched by railway, at the station of which they arrived safely enough, but having to be conveyed some 20 miles by waggon on a frosty night, and not being properly protected (although the baskets containing them were matted in the ordinary way,) they were completely frozen through when they arrived at their destination, by daylight in the morning. So much were they frozen, that the succulent tops for several inches, were apparently masses of ice, and nearly the whole of the leaves had suffered more or less. On the extent of the damage being known, the whole of the plants were quickly removed to a dark cellar; and, to make "assurance doubly sure," a covering of mats supported by a temporary frame-work, was thrown over them. Water, only removed from the freezing temperature, was freely applied to the foliage, and no light admitted for 24 hours. On removing them, the damage they had sustained was but nominal. Scarcely a leaf had suffered, except such as had been bruised in the unpacking. Every leaf or part of a leaf so damaged, had to be removed. Another instance:—On a festive night in midwinter, the person in charge of a conservatory forgetting, or by procrastination omitting to apply the necessary artificial temperature, to expel the frost, (for it had set in severe rather unexpectedly) found, on his entering the house at 4 o'clock in the morning, that the tender plants were much frozen. He applied fire to the boiler, raised the temperature a degree or two above freezing, and then liberally applied cold water with the syringe. The result was, that nothing beyond a few leaves on a stray shoot or so, evinced any damage, and by sunrise all was as promising as could be wished; so completely were the plants recovered, that the circumstances would never have been reported in the *Chronicle* had not the delinquent revealed the mishap after all danger of detection was past. One more:—A house of Geraniums was penetrated by the frost, the plants were much frozen, and the frost was on the increase when the circumstance became known in the morning. Cold water was in this case applied, but without the precaution of raising the temperature above freezing point. The result of course, was, that the water, as soon as it fell on the foliage, became ice, till the plant looked encased in candied sugar. The more water the greater evil. This detected, a fire was lighted, and the necessary temperature acquired, when the result was all that could be wished. Sunlight was prevented reaching the plants till a recirculation of the fluids had taken place. In all similar cases light should, if possible, be excluded; in fact, every in-

centive to a rapid reaction of the vital powers should be applied only in the most limited degree, increasing stimuli with the requirements of the plants, retarding rather than accelerating vital action. As regards the action of light on plants, a wide field is open to the ingenious experimentalist. Let a given number of plants be frozen; admit to some light in its ordinary condition, from others exclude the chemical ray; from more, both the chemical and heating ray; to others admit only the luminous, or vary its application in the many ways which will occur to the chemist. The result must be of importance alike to the gardener and the pure man of science. *G. L.—Gard. Chron.*

The Scarlet Geranium at Sea.—In the year 1825 I sailed for America in a ship conveying emigrants to Canada, all of them humble people from a rural district, to whom the inside of a ship or the waves of the sea were as strange objects as a sight of the man in the moon would have been, or a slice of the green cheese, of which, according to nursery traditions, it is composed. Fine hearty, sturdy country people they were, as rich in children as they were poor in pocket. Most of them had connexions in the land they were going to; but beyond a belief that there were no taxes in America, and consequently there could be no want, their ideas on the subject were vague enough. It was an amusing sight to an unreflecting young fellow, as I then was, to see their bits of furniture brought on board, the old carved chests containing their wardrobes, their various cooking utensils, and the little things with which they could not part, because "they had had them so long." Amongst these were various birds, a cat or two, and a dog; one little girl had a field-mouse in a cage; and a nice matronly woman had a Scarlet Geranium. Now my mother had been fond of Geraniums, and she had often permitted me when a child to water them as they stood near a spot where she was engaged with her household duties; so that it was like an old acquaintance, this said Geranium, in its green-painted tub. Its owner had been repeatedly told "it would die" on the voyage. "Never mind, then; let it die, so long as it dies with me," was her reply, as she fastened it up in a corner of the rude deck on which these poor emigrants were to live for seven long weeks. And so, with a strong breeze and a flowing sheet, we left the harbor together. The fair wind with which we sailed soon shifted into an adverse quarter, and off the coast of Scotland, (for we were going north about,) it became a dead *noser*, with all the usual amount of miseries.

To a set of poor country folk, what can exceed the miseries of the temporary lower deck of a collier, converted into an emigrant ship, hatches battened down, to keep out the washing seas or heavy rain, foul air, seasickness? Miseries indeed! The word as understood when applied to felons in goal, or paupers in a workhouse ashore, conveys no conception of the wretchedness in question. It was soon found of no use to contend with the violence of the elements; so, when things were at the worst, the captain ordered the helm to be put up, and we made a fair wind of it by running to the south. As soon as the ship was fairly before the wind, the hatches were unbattened, light and air were admitted, attempt was made to get things snug. As a sailor boy, part of this pleasing duty fell to my lot; and well do I remember the thoughts of my comfortable home which were awakened when, amidst the desperate confusion of that lower deck, the old Geranium caught my eye. It had flowers on when it came on board; they had soon fallen off; day by day it sickened and languished; the color went little by little out of its leaves; and then they drooped off altogether, and were succeeded by smaller and feebler ones, till at last all appearance of life had entirely vanished. Still it was kept. It had flourished for years in the cottage window of its owners, which looked out upon pleasant green fields. That cottage and those fields, now tenanted and tilled by others, still lived in their recollection, and were associated no doubt, with the plant in question. And so it went with us; crossed the wild dark ocean, accompanied us up the St. Lawrence, and there we parted, for it went ashore with its owners. Yet I saw it once again; for being on shore upon some duty, I went upon Goudie's wharf, where I found a family group sitting upon their effects preparatory to embarkation up the river in a steamboat. They were part of our emigrant passengers. And standing by the side of their bedding and boxes was my old acquaintance, the Scarlet Geranium—dead, dead—looking as hopeless and miserable as the unhappy exiles themselves. But if, as I have little doubt, they have long ere this made for themselves a happy and independent home in the western solitudes, it may be hoped that with the Scarlet Geranium they did not lose the last link which bound their affections to their father land.—*The Florist, Fruitest, and Garden Miscellany for Jan.* 1851.

Domestic Notices.

Mr. Glover's Model Fruits.—Our neighbor, Mr. Glover, Fishkill Landing, N. Y., who is both an artist of talent, and a zealous amateur of horticulture, has turned his attention, for some three or four years past, to the production of fac-similes of fruits and insects. After a long course of experiments, he has succeeded in making a composition for modelling fruits, which possesses much more of the truthfulness of nature, than the usual wax imitations, together with that *durability* in which the wax models are wholly wanting.

Mr. Glover has for some time past been endeavoring to give a practically useful turn to his efforts in this department, by taking casts of all the principal varieties of standard fruits cultivated in this country, with a view to the formation of *Pomological Cabinets* for Horticultural Societies. As the specimens are cast in moulds made from the very fruits themselves and colored after nature, the most perfect accuracy is, of course, obtained. A society in possession of one of these Pomological Cabinets, would have always at hand an authentic specimen or model of the leading sorts to refer to, when the fruit itself is not in season—thus settling a host of disputes among the members who trust to memory.

The advantages of this will be apparent to every pomologist, and the beauty and appropriateness of the collection would commend it to members of the Society not directly interested in its utility.

Mr. Glover's collection, though now very large, is daily increasing by casts from new varieties, and begins to attract considerable attention. The N. Y. State Agricultural Society, and the Massachusetts Horticultural Society, have ordered the Pomological Cabinets from him, and we have no doubt Mr. Glover will find calls made upon him from other quarters, both public and private. Nurserymen having new varieties of merit, not known to their customers, will find a model by Mr. Glover, a great help to verbal description.

The Augusta Rose.—Some of our readers may remember an account of a new yellow climbing rose, a seedling, described under this name in vol. 4, p. 147. This rose, as we understand, has not yet been sent out, but the whole stock of it is in the possession of Messrs. Thorp, Smith, Hanchett & Co., of Syracuse, N. Y.

We have just received by express from these nurserymen, a small box containing a branch of the Augusta Rose in good order, and are glad to bear testimony (as far as a single cluster of cut flowers will allow us,) to the beauty of this new variety. The flowers are a fine yellow, deeper than Cloth of Gold, and deliciously fragrant. We learn from those who have seen this new American seedling growing, that it is a fine vigorous climber, with an everblooming habit—and have no doubt that it will prove a great aquisition. Messrs. T., S., H. & Co., write us, that "mere cuttings struck in March and April—some of them not more than six inches high, are now in full bloom. Every new shoot blooms freely."

Princess Alice Maud Strawberry.—As one of the objects of the Horticulturist, is the dissemination of correct information in respect to the varieties and character of fruits, I propose to give what I have reason to believe is the true history, at least in part, of the Princess Alice Maud Strawberry. In an article "on Strawberries and their culture," in the last number of the Horticulturist, by Dr. Hull, of Newburgh, it is stated that "a plant which has gained great reputation in our neigborhood, under the name of Alice Maud, has proved, under Mr. Downing's examination, to be identical with Willey." It is there classed as a pistillate variety. This, of itself, is sufficient proof that it is not the true variety, for the Princess Alice Maud is a perfect staminate plant, with a very large and beautiful flower. It is of English origin; and in the same number of the Horticulturist, under the head of "Foreign and Miscellaneous Notices," is an extract from the Florist, p. 337, where this variety, among others, is "recommended as the best, by Mr. Whitney." This character is fully sustained in this part of the country.

This variety may have been imported by persons in other sections, but all under that name here, were obtained from JOHN SLATER, an Englishman, and now a market gardener in the vicinity of Alexandria, Va., who imported them from England a few years ago, and disseminated them amongst us.

He cultivates the strawberry largely, for the supply of Washington market, and prefers this variety before any other, as with him it is more productive than any he has cultivated. This opinion is sustained by Dr. BAYNE, of the same vicinity, who, by the bye, not only cultivates fruit largely, but is an excellent judge of such things. He not long since considered Hovey's Seedling as the best variety for him, but now acknowledges that the Princess Alice Maud is the best market fruit, and he cultivates largely for market; whether this character will be sustained in all soils remains to be seen. The soil of both Dr. BAYNE and Mr. SLATER'S gardens is a fine sandy loam, interspersed more or less with rounded pebbles and gravel, similar to much that is met with in the vicinity of tide water rivers. The ground of the latter is but a few feet above tide, while the former is, perhaps, as high as 150 feet.

This strawberry is a strong grower, and succeeds best in rows, say two feet apart; the flowers very large staminate, fruit conical, color darker than Hovey's Seedling, and more glossy, flavor more sprightly, and a more abundant bearer. YARDLEY TAYLOR. *Loudon co., Va., 8th mo., 9th.*

[Our correspondent is quite correct in his account of the Alice Maud Strawberry—an English variety of excellent qualities, well known in this state also—the blossoms staminate, and the flavor delicious. Dr. HULL did not intend it to be understood that he supposed the pistillate strawberry described by him, to be the Alice Maud—he only mentioned the fact that it had been wrongly disseminated under that name. ED.

PRESERVING FRUITS AND VEGETABLES.—I observe in the June number of your paper, a correspondent, L. of S. C., making inquiries as to the best way of preserving *fresh* for a length of time, fruits and vegetables. He is right in all his preparations, except that instead of putting them in *boiling* water, he should put them in *cold* water, with a quick fire, and just allow it to come to the boiling point, and no more; at the moment the water boils seal up the cans hermetically. I will except corn, which should boil two minutes, and should be cut from the cob before putting in the cans. I am a greater part of my time from home, and cannot give much time to writing. Otherwise I should have written more in detail about this mode of preserving fresh fruits, vegetables, &c. Very resp't yours, J. C. WRIGHT. *Scottsville, Albemarle county, Va.*

CULTURE OF ACHIMENES.—What is the proper manner of wintering Achimenes? Last autumn, after the leaves had died down, I put my pots away on a back shelf of the greenhouse, in a warm part, out of the reach of frost, and gave them no water all winter. When I came to repot them in the spring, the tiny bulbs or tubers had all disappeared, not one to be found; this treatment is evidently wrong. How must I proceed to winter these pretty plants, in the event of procuring a fresh supply? Yours, &c. FAIRYMEAD. *Canada East.*

We suspect, from having seen such things before, that your disappointment in not finding the bulbs of the Achimenes where they should have been, for the spring repotting, was owing to the plants having been exposed to a slight frost in the autumn before they were housed. The bulbs are found very near the surface and a single cold autumn night is sufficient to destroy them. Your manner of wintering them is the correct one, and the disappearance of the bulbs must be either owing to frost or mice. ED.

PEACHES AND NECTARINES ON ONE TREE.—SIR: To verify the statements made to you the last season, and which you were kind enough to place in the columns of your Journal—having reference to the peach and nectarine growing upon the same stock, I yesterday visited the tree, in the nursery grounds of Mr. DUNCAN C. WOOD, in this vicinity, and ascertained that the statement was correct in every particular—confirmed by another year of growth—peaches and nectarines growing on the twin stems. I examined the root, also, finding they came from the same *stone* or *pit*, spoken of in that communication. The peach given to Mr. WOOD by

his countryman, Mr. Buchanan, from the yard of Mr. Chahles Tompkins, all of this city.

I have again conversed with each of the persons named, and find the facts precisely as I have stated them.

I take the liberty of again noticing these facts to you, as the season for peaches and nectarines is approaching. I do so, as there are doubters to such unique freaks of dame Nature, in all parts of our land. Yours, &c., J. Bingham. *Hudson, July* 24, 1851.

New-Jersey Horticultural Society.—The annual exhibition of the above Society, will be held at Jersey City on the 24th, 25th and 26th Sept. A liberal schedule of premiums is offered on fruits, flowers, and vegetables, which is open to competitors from all parts of the country. The various lines of conveyance will afford every facility for transporting articles intended for the exhibition, and the central position will doubtless bring together a collection of rare objects of interest to the horticulturist. Contributions of every species of horticultural and floricultural produce are earnestly solicited. Articles intended for the exhibition may be directed to the "N. J. Horticultural Exhibition, Jersey City," and will be received by the proper committee. All articles intended for the exhibition must be delivered at the Hall before 12 o'clock on Wednesday, Sept. 24th. Ira B. Underhill, Rec. Sec.

☞ The Grand Autumnal Exhibition of the Pennsylvania Horticultural Society, will be held in the Museum building, Philadelphia, on the 17th, 18th, and 19th of September.

☞ The annual exhibition of the *Albany and Rensselaer Hort. Society*, will be held in the old State Hall, on the 10th and 11th days of September—that of the *Rhode Island Hort. Society*, will be held at Providence, on the 10th, 11th, and 12th of Sept.—that of *Cinnati*, Ohio, takes place on the 1st, 2d, and 3d of October.

Pennsylvania Horticultural Society.—The stated meeting of this Society occurred August 19th, in the Chinese Saloon, Philadelphia. The President in the chair. The Hall was much crowded with the beauty and fashion of the city. Every visitor was highly gratified with the display. The object of the greaest attraction, and it assuredly merited all the admiration bestowed upon it, was the leaf of the far-famed *Victoria regia*, or great water lily, from the hot-house of Caleb Cope, the President of the Society. This leaf was six feet four inches in diameter, or nineteen feet in circumference; of circular form, peltate, emarginate at that portion of the border which was the point of its orignal sagittate shape; a similar notch existed directly opposite, where a suture occurs, which latter is caused by the adhesion of the lobes of its arrow-headed form; the venation was remarkably prominent, and beset with sharp spines, as also was the rope-like petiole; the whole of the under surface was of a beautiful purple tint. The flower bud not having expanded, was not shown; as buds are observed issuing from the plant, it is hoped and confidently expected, that flowers may be seen at the grand autumnal display, commencing on the 17th September. A representation in wax, of the flower, obtained by A. Kimber in Europe, was exhibited. A choice collection of flowering plants, from Robert Buist's, were presented. Fine baskets of choice cut flowers, from Jno. Ellis, gardener to Caleb Cope, Henry A. Dreer, and Robert Kilvington, were seen.

In fruits the display was really very fine. Of grapes, there were seven contributions, consisting of Black Hamburgh, White Chasselas, Cochin China, White Frontignac, Golden Chasselas, and a collection consisting of many varieties. Nectarines were brought from green-houses, of the Elruge, Vermash, new White, Red Roman, Pitmaston, Orange, and other varieties. Of plums, there were six contributors, and the kinds shown were the Marston, Green Gage, Mammoth, Quetch, Blue and Cleavinger. Highly flavored Cayenne Pine Apples were from the President's houses. Delicious peaches of the Crawford's Early, the Heath, free, and a seedling variety, were seen. Of pears, there were from one source eight kinds—the Bartlett, Cailot Rosat, Washington, Bezi de la Motte, Chaumontelle, Moyamensing, Andrews, and Ah mon Dieu, and the Dewitt, Bartram, Rousselet de Rheims, Seckel, and a seedling, and the Esperion, St. Ghislain, and three unknown French kinds; the Andrews, Duchess de Berri, the Dearborn's Seedling, the Julienne, the Ear-

ly Catharine, Seckel and Gratz. Of apples, the following varieties—Pearmain, Maiden's Blush, Porter, Hagloe, and Hawthornden. Several new varieties of melons were brought forward. Three fine displays of vegetables were shown.

The committee on fruits submitted a report of fruits examined ad interim—viz: Fine specimens of the Bloodgood, Dearborn's Seedling, Ananas d' Ete, Benoist pears, from Charles Downing, Newburgh, N. Y.; the Gratz, Mather and Ott pears, and Cleavinger plums. The Bloodgood, Dearborn's Seedling, Ananas d' Ete, and Benoist, were of the finest quality; the last were particularly fine. The Gratz was of good quality, and believed to be synonymous with Julienne. The Mather is a large, fair native pear of Delaware county, of great productiveness, but wants flavor. The Ott, as heretofore, sustains its high reputation, excelling in quality all the summer pears. The Cleavinger is a native purple plum, free, of the largest size, and of good flavor. Tho. P. James, *Recording Secretary.*

Ripening and Preserving Fruit.—At a meeting of the Massachusetts Hort. Soc., May 31, the following report from the Fruit Committee was read by the Chairman, accepted and ordered to be printed.

The Fruit committee, to whom a communication from Mr. Daniel T. Curtis, in respect to a method discovered by him for ripening and preserving fruits, has been referred, ask leave to report at this time but in part, upon the subject committed to them.

Specimens of fruit, consisting mainly of pears, have repeatedly, during the past year, been placed upon the tables of the Society, by Mr. Curtis, that had been preserved by him for a long time after their usual period of maturity, that were found on examination to be perfectly sound, and, in some instances, to have retained unimpaired their juice and flavor. Among these pears were specimens of the Seckel, Bonne Louise de Jersey, Duchess d'Angouleme, and Easter Beurre. The Seckels, though a kind peculiarly subject to early decay, were perfectly sound, and retained in perfection the peculiar flavor of that variety. Of the other varieties, the specimens exhibited were generally, though sound, insipid and tasteless, arising from the circumstance, as Mr. Curtis stated, and as their appearance indicated, that they were, when packed, and subjected to his process, immature and imperfect.

These pears were exhibited by Mr. C. as late as January and February, months after their usual season of ripening, thus proving, as no signs of decay were visible, that their season could be almost indefinitely prolonged.

Mr. Curtis has sent pears preserved and packed in his peculiar method, to the Havana, to London, and San Francisco, thus subjecting his method to the most severe trials.

The following extract from a letter from his correspondent at Havana, shows the result of the experiment, as far as the shipment to that city is concerned: "The pears arrived in perfect order; they were delicious. I never thought they could be eaten in so perfect a state, except in the country where they grow."

The Gardeners' Chronicle of April 5th, states, that at the Exhibition of the London Horticultural Society, April first, a box of 15 Easter Beurre pears, received from Mr. Curtis, of Boston, were exhibited; that cases containing seven of these pears were opened, and of them, four were found to be decayed, and three good; and then states, "These pears were stated to have been ripened by a method peculiar to Mr. Curtis, the nature of which was not explained. They were, for the most part, melting, sweet, and perfectly ripe, a condition which this fruit with difficulty attains with us in England." The society awarded Mr. Curtis its Knightian medal.

The California Daily Courier of April 9th, acknowledges the receipt, through Mr. D. H. Haskell, of Adam's Express, of a "magnificent pear, as sound as when packed at Boston." The Pacific News, and Alta California, and other San Francisco papers, make similar acknowledgments, and all concur in stating that the pears were perfectly sound, and that as they were sent for the purpose of testing the practicability of sending fruit to California, across the Isthmus, speak of the experiment as successful. The pears were shipped at Boston, January 27, and after a detention of 70 days, arrived in California in April. The papers referred to state, that the pears, though sound, were deficient in flavor, a circumstance to be imputed, as with those exhibited to the Society, perhaps to the immature and imperfect state of the fruit when shipped, and not to the effect of the passage, or a difference of climate.

From the facts now detailed as well as from their own observation, your committee feel justified in expressing a confident opinion, that after many unsuccessful trials of various processes and different methods, Mr. Curtis has succeeded in discovering a method of preserving fruit for a very long, if not for any desired period, and that this method is capable of a practical application.

Although Mr. Curtis has, as he states, preserved other varieties of fruit besides pears, yet so far as the personal knowledge of the committee extends, the fruit subjected to his process has thus far been mainly of the latter description, and they feel, before arriving at a conclusive opinion respecting the value of this discovery to the Society, experiments with other species of fruit, as peaches, plums, &c. &c.,

should be made, and opportunity be offered for their examination, after being subjected to the process. With a view to the gratification of the committee in this particular, Mr. Curtis is about commencing, under their inspection, some experiments with the early and soft fruits, to be continued with other kinds, as they come into season.

In addition to the discovery of a mode of preserving fruit, Mr. Curtis seems also to have succeeded in finding out a process by which such varieties as are difficulty to ripen, may be brought to perfection,—a discovery of almost as much interest to cultivators, as that by which the season of all varieties is so greatly prolonged and their safe transmission to distant places secured.

That the discoveries of Mr. Curtis are important, and that he is justly entitled to an honorary and pecuniary recompense at the hands of the Society, as well as that a knowledge of the process should be, if possible, procured for the use of its members, your committee entertain no doubt, and they believe that it will be but fulfilling some of the objects for which it was instituted, in testifying by such recompense, a proper appreciation of the merits and discoveries of Mr. Curtis, and in procuring for the public the means of availing itself of the advantages to be derived therefrom.

Under existing circumstances, however, while they wish now to place on record such evidence of the claims of Mr. Curtis as is afforded by this expression of their opinions and statements of facts, your committee are of opinion that the final action of the Society, in relation to this matter, should yet be delayed until the result of the experiments referred to are ascertained, and such further information with respect to the expense attending the process and the mode of practicing it procured, as will enable them, in view of the beneficial results of which it is capable, the better to recommend, and the Society to adopt, such measures in relation to these discoveries, as Mr. Curtis seems to deserve and its own interest to demand.

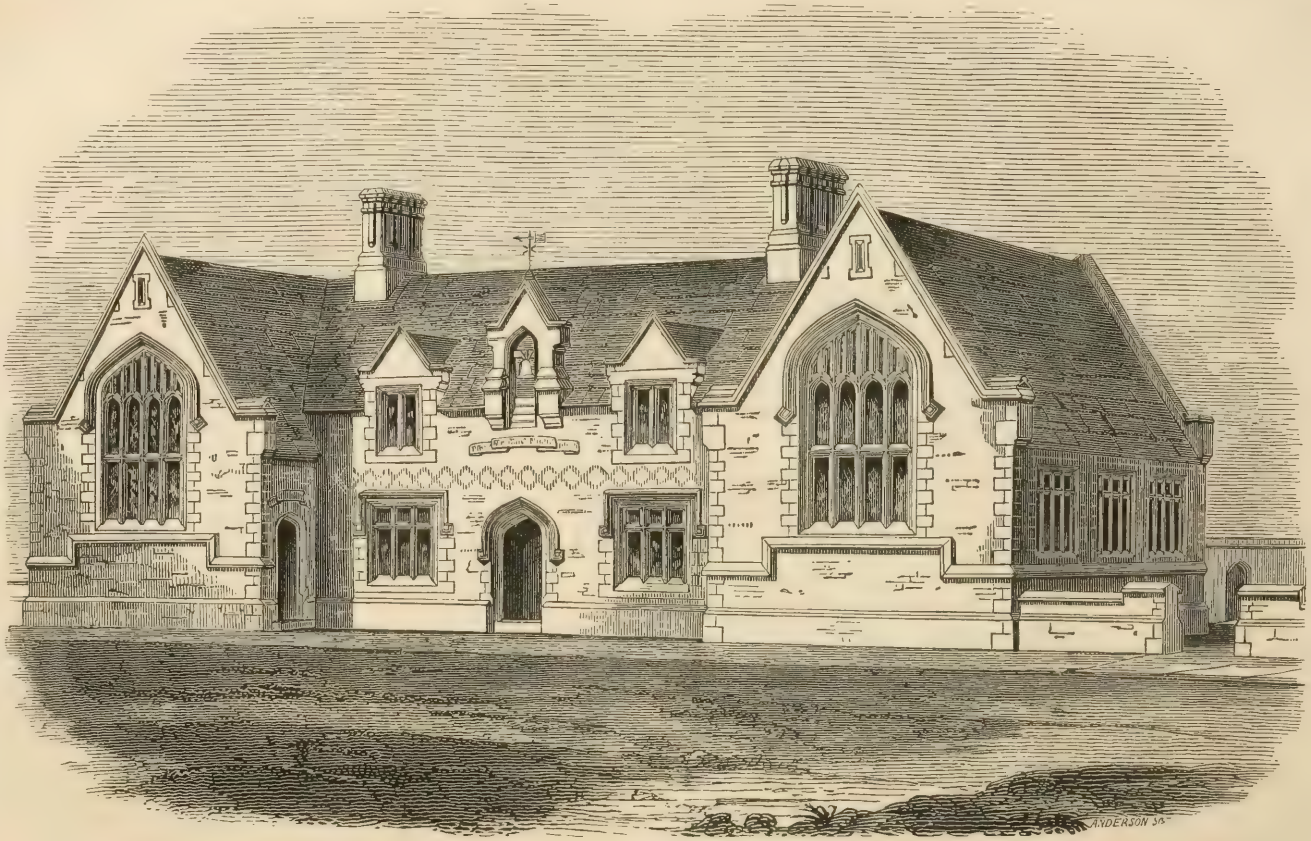
With these views, your committee ask that the whole subject may yet be left in their hands, and that further time be allowed them to consider what action it is proper that the Society should take in reference thereto. Joseph S. Cabot, Chairman.

White Blackberries.—They were first grown in the garden of Mr. J. S. Needham, West Danvers, and seem to possess some remarkable characteristics which eminently entitle them to general cultivation. The first specimens of this new species were exhibited in Boston the last season, and were pronounced by competent judges, a curiosity, as well as a most palatable fruit; in which opinion I think you will fully concur. The original plant was discovered growing wild in the midst of a blackberry patch in the State of Maine; and this year, for the first time, it has fully demonstrated what it is capable of producing under garden cultivation. It is a tall, upright bush, growing to the height of four and five feet, and is prolific to an extent scarcely credible to one who has not seen it in bearing. The bush from which these, which I send you, were picked, produced *eleven quarts* of marketable berries! The size as well as the quantity of the fruit would doubtless have been larger, if nearly half of the fruit had not been removed in the spring in separating the shoots from the parent stock, for the purpose of propagation. Besides being a great bearer the plant is hardy and needs no artificial protection during the winter.

The flavor of the high blackberry is well known to be greatly superior to the common low blackberry; yet every cultivator is aware that, except in some favorable localities, the high blackberry is a shy and capricious bearer, and unworthy of his attention. When brought under garden cultivation that plant grows rank; but the few berries which it bears are ill-formed, hard and bitter. All these objections this new species obviates, and promises to bring their delectable fruit into general cultivation.

Mr. Needham has in his possession the original plant, and all that have been propagated from it; and in the spring he hopes to be able to supply demands for them from abroad. A visit to Mr. Needham's garden would richly compensate one curious in such matters, for his trouble. The cold weather of the past week has given some of the specimens I send a darker color than naturally belongs to them. The berry is usually as light colored and transparent as a sweet-water grape.—[*Boston Jour.*

A New and Valuable Cherry.—We received of James Hyde & Son, nurserymen, Newtown Centre, a lot of fine cherries on the first day of August, which from its lateness and superior quality, we think will be a valuable acquisition. It originated in that neighborhood. The fruit is medial size; obtuse heart shaped; dark red and mottled, light amber in the shade; stem rather short and slim; flesh soft, tender, very juicy, sweet, rich, and delicious; stone small; ripe the first day of August.—*N. E. Farmer.*



A Design for a Village School House.

Hort: Oct. 1851.

THE

Horticulturist,

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

A Reform Needed.

THERE is one feature in the municipal government of most of our towns and villages, indicative of so low a point of civilization, that it calls loudly for reform. It would, perhaps, hardly be worth while to call attention to it, trusting to the progress of good government and propriety to banish it, did it not appear rather to take the position of a more established fact, year by year.

We refer to the custom of allowing animals that belong to the pasture-field, and barn-yard, to run at large in the highways of the country, and streets of the cities.

We believe we are correct in saying, that this abomination prevails by toleration all over the Union, with the exception of one single state, Massachusetts—which forms a most honorable exception.

The traveler may journey from one end of Massachusetts to the other—he may visit her smallest hamlets—her lovely, elm-embowered villages—her busy manufacturing towns, or her thriving and populous cities—and everywhere he sees more order, cleanliness, and good government, than elsewhere. If it pains us as a New-Yorker to be obliged to confess their superiority—it gives us pleasure as an American, to be able to point to one of the states where public education has been longest and most largely diffused, as a standard in these respects to other states that yet lag behind in these external marks of civilization.

We believe, indeed, that the same municipal laws governing the towns and villages of Massachusetts, which forbid the running at large of animals in the streets, are for the most part in existence in other parts of the country. But in Massachusetts these laws are enforced—in other states they are a dead letter.

The most flagrant violation of these laws, and the most unaccountable one, is in the great commercial metropolis of the country, New-York. In the third largest city of the christian world, where the wealth, luxury, and refinement of the oldest and most

cultivated portions of Europe prevail, the civilization is at so low an ebb in this respect, that hogs and cows have free range of the streets—that droves of fat cattle and sheep are driven through the streets at mid-day, and hardly a month passes by that the newspapers do not record accidents to women and children—gored or trampled upon in the very park in front of the city-hall itself. All over the country the condition of things is little or no better. In Washington, droves of cows and hogs, by hundreds, ramble at will over the open unimproved grounds about the city—in almost every town the traveler stumbles over swine at every corner of the street; in almost every country neighborhood, the owners of gardens and orchards tremble daily for the sanctity of their premises, and guard jealously the gates, lest the domestic animals that are nobody's property in particular, but live by robbing the community in general, should make an onslaught upon our light wooden fences, and sweep garden and orchard before them.

The extra cost of fencing against these commoners, amounts to at least hundreds of millions of dollars to the country at large—as any one who has traveled through France,where no animals run at large,and there are miles without fences,will understand. Every man who owns a few acres of land, spends hundreds of dollars in shutting out animals that are not his own, and have no right to be at large to his annoyance and cost; and thus the country is both disgraced and over-taxed by a miserable shortsightedness upon the part of the more intelligent members of the community, who will not boldly enforce the law and protect their own interests.

We have called this feature a mark of a low condition of civilization, and every thinking person who will give it a few moment's, reflection, will, we think, agree with us.

In Ireland, the poor cottagers think it no degradation to humanity to share the best and only room of their cabins, with their pigs. In Switzerland, even wealthy farmers lodge their cattle in the basement story of their houses, and a neatly rounded manure-heap is one of the scenic features that meets the eye from every front-door.

Will any American attempt to argue that this condition of things in Ireland and Switzerland, is not the index of a lower state of civilization than our own? But will not any person, either from England, France, or even Massachusetts, also feel equally shocked at the *brutal* aspect of the streets in most parts of the United States, and put it down as an almost equally decided mark of low civilization?

It seems to us that as there can be no question on this subject, and as no right-thinking man can wish to live among cattle or share the streets and avenues with them, it is time that something should be done to arouse public attention to the barbarism we speak of. It may be thought a little matter by many persons, but so are personal cleanliness, the health of cities, the introduction of pure water in towns, and even common schools—all "little matters" if the public sentiment and public intelligence are at so low an ebb as not to see and feel their value. But in fact everything which tends to make mankind respect themselves, tends to raise them in the scale of humanity. Certainly the more we live like men, the more we fulfil this condition, and it is no help to such a hopeful condition to pass great part of our time in

the streets of towns and cities when animals and men make common enjoyment of them.

There are two classes of citizens who stand in the way of wholesome reform in the matter we speak of. One, and the largest, is an ignorant and indifferent class—who see nothing uncomfortable in this state of things, and need therefore to be roused and shamed into action by an expression of right feeling on the part of those who see cleanliness and decorum in their true light; the second consists of demagogues who fear to disturb the prejudices of that small class in the community, which understand by the word liberty, not a wholesome obedience of just laws made by the people—but a certain license to do anything and everything not absolutely criminal, with their own property, and that of all their neighbors.

That it is only needful for a few good citizens in every town to look at the matter clearly, and determine to have orderly and sanitary laws like these enforced, we have had abundant proof in the town where we live—which is, so far as we know, the only one in the State of New-York where animals are not joint-stock possessors of all the streets and highways. Eight or ten years ago, Newburgh, which has a population of nine thousand inhabitants, was one of the least cleanly and orderly towns in the North. Droves of hogs, cows and geese ran at large everywhere, and the possessor of a garden or even of a bit of sidewalk was always liable, night and day, to the nuisance and annoyance of numbers of these commoners. At length it was determined by a few of the more orderly inhabitants, to endeavor to have enforced the law for pounding animals. The trustees of the village doubted the possibility of enforcing the law, and faltered in their duty. At the next election, however, the hog-law was made the test, trustees favorable to its execution were elected by a large majority, nothwithstanding a fierce opposition. When the law was enforced, so strong was the feeling of resistance, that the public pound was several times broken into at night, and the animals released. But the orderly part of the community stood firmly by the authorities, and the latter did their duty, until the law triumphed. After much grumbling on the part of many who imagined that they had a clear right to prey upon the public in this manner, a general acquiescence came about. And now for five years we have had cleanly streets, free from all animals of all kinds, and such an air of neatness and rural beauty has sprung up, that the place has almost changed its character. The carriage-gates of grounds, like our own, which, under the old system of things, needed almost an armed huntsman to keep out the brute population, are now wide open day and evening, without the least plant suffering depredation; and what is the best part of the story, so completely has the feeling of better civilization triumphed, that it would, we imagine, be very hard at the present moment, to persuade the population of this town to return to the old condition of streets, overrun with unclean beasts.

In order that the reform may spread, right-thinking persons must both protest and take up arms against the nuisance—and we hereby enter the lists with all our hearts, and call on our fellow citizens throughout the country to shake off this remnant of low civilization.

NOTES ON THE GRAPE.

BY WM. W. VALK, M. D., FLUSHING, LONG ISLAND.

Dear Sir—In your Horticulturist for September, page 410, I notice an article headed "The Isabella Grape—Its History, &c." You have some remarks appended thereto, a portion of which I quote, viz: "There is, unfortunately, no well authenticated proof that our native grape has ever been hybridised with the grapes of Europe. All our seedlings, so far proved, are chance seedlings—but we believe some of our pomologists are now busy with the experiment of crossing the species if possible—to effect a more speedy amelioration of the hardy native varieties. A cross between Black Hambugh and Isabella, giving us the size and luscious flavor of the former, and the hardiness of the latter, would be worth untold thousands."

I beg leave to refer you to Hovey's Magazine, Vov. IX, page 134. You will there find an article "*On the Production of hardy Seedling Grapes, by hybridizating the Native with the Foreign Grape.*" I communicated the same to that periodical, and should like to have you read it. You will perceive, that as far as human accuracy can be depended upon, I succeeded in fertilizing the Hamburgh with the pollen of the Isabella. In that year, (1845,) I raised fourteen seedlings from the fertilized seed. Absence, and other causes combined, compelled me to neglect them for more than two years, at the end of which time but *two* of them were living, and these not in very good order. All had been *carefully* labelled, and kept in pots. In the spring of 1847, I planted both these seedlings in the open soil, at the head of my garden, tacked them to the fence as they grew, and have rather *neglected* them than otherwise. I did not prepare the earth in any way for their support, nor have I given them the *slightest* protection *during the last four winters*. Last year they fruited for the *first* time—one vine having on it eleven bunches, the other thirteen. The fruit was of good size, and *very* handsome looking, but before it was ripe, the poultry fancied it, and soon destroyed the whole of it, much to my regret and annoyance, for I now began to watch my vines with more than ordinary interest. This season they have borne a little more, and on one vine the fruit was beautiful, on the other, (with a *western* exposure,) the mildew rather injured its appearance. During my absence for four days in Connecticut, some miserable thief got over my fence, and helped himself to all but *one bunch* of my finest grapes, leaving the mildewed one's scarcely touched. Had I caught him in the act, I *think* I should have been disposed to pepper his footsteps with small shot; as it is, my *best* grapes are gone, and *they were not ripe by at least a month*, though deeply colored.

The concluding paragraph of my article in Hovey, reads thus: "We shall take care to ascertain all particulars as soon as practicable, and make them known when we are satisfied fully of their perfect correctness, not speculating carelessly with the credulity of our co-laborers or the public, but giving them the true result, whatever that may be." What is this result? It is, as far I know and believe, a very important one to pomologists generally. My two seedlings, from the *Hamburgh fertilized by the Isabella*, have lived through much neglect, and *borne triumphantly the frosts of four winters*. They are at this moment in as good health as can be under the circumstances, and fully deserving of the utmost care. The fruit so far has not been as *large* as the Hamburgh, but it is *thin skinned*, and has a soft and pleasant pulp, wholly unlike the Isabella. Is it hardy? I have told you what I certainly know and believe, that my seedlings are as hardy as the Isabella, and bear fruit *equal* to the Hamburgh in everything but *size;* better cultivation may give them that. In

foliage they more nearly resemble the Hamburgh, though some of my friends here think them distinct; the leaves are "very deeply serrated."

The bunch the thief left is not a good specimen to judge by, but poor as it is, I send it to you. The fruit is not ripe yet, but you can tell, perhaps, *what* may be thought of it.

Yours very truly, &c. WM. W. VALK, M. D.

Flushing, L. I., Sept. 13, 1851.

REMARKS—The bunch of grapes referred to by Dr. VALK, reached us in excellent order. At first sight the *bunch* resembles that of the Isabella—the grapes being hung somewhat loosely upon it. But the berries are round—blacker than the Isabella, and totally distinct in flavor from our native grapes—resembling the dark colored foreign grapes. There can be no doubt that this is the first genuine cross between the foreign grapes and our natives, and if the cross realizes the promise of this single bunch—evidently a poor sample of the product of the vine—this new seedling of Dr. VALK'S will soon become widely sought after. The fact that hybrids may be raised, being settled, we shall expect to see a new and delicious class of hardy grapes springing up in this country, admirably adapted for the table and for wine, and perfectly suited to our climate. ED.

SUPERPHOSPHATE OF LIME FOR TRANSPLANTING TREES.

PROF. LINDLEY.—IN THE GARDENERS' CHRONICLE.

There are no doubt places in which all the skill of the planter will at first fail in getting trees to grow, but even in such cases he need not despair; the cause of his failure usually is, not that the soil is absolutely unfit to support vegetation of any kind, but that the circumstances being highly unfavorable, the plants are not able to get over that shock to their systems which they always suffer in ordinary transplanting. It is evident that plants which are moved with bare roots, as young trees are, must receive a far greater check than those which are moved with a ball of earth; and it is very often found that a little extra care in the planting is well repaid, because if the tree survive this check, and form fresh roots, it will generally get such a hold upon the soil, that it is then able to grow up, and form a healthy tree. In planting the most barren and exposed situations then, particular care must be taken, and it appears in such cases to be well worth while to add some "improver" to the soil, thrown into the holes in which the trees are planted. The quantity required is small, its cost need not be great, and the labor of using it is a trifle, compared with the good effect produced by its application.

The effect which it is desired to produce is the formation of fresh roots, and any substance which will cause the plant to throw out a quantity of fibrous rootlets, will enable it to overcome the evil effects of its being transplanted. It appears that phosphoric acid possesses a very great and remarkable influence on the development of roots, causing plants to throw them out with unusual vigor; we do not know of any very satisfactory explanation of this phenomenon, either chemical or physiological, but of the fact itself there seems to be no doubt. The most convenient mode of employing this substance is in the form of superphosphate of lime, as it is called, that is to say, a mixture of oil of vitriol and burnt bones. This compound, which is rich in phosphoric acid in a soluble state, may be readily mixed with a little dry mould, and it then forms a most valuable aid to the planter; a little of the mixture being thrown in round the roots of the transplanted tree,

aids greatly in the formation of root fibres, and consequently assists very much in establishing the plant in its new situation. Or, if scattered over the soil next the roots, before it is finally watered after planting, it is well distributed to the places where it is most required.

When a young tree has its roots thrust into such a hole as is made by a single cut of a spade, or even by two cross cuts, the roots are crowded together, and crushed into a small space; they are unfitted therefore to collect and absorb nourishment, at a time when the plant stands peculiarly in need of it. Not only is the freshly-planted tree able to obtain little food by means of its roots, in consequence of the mode in which it is planted, but the supply of nourishment is at the same time also diminished in consequence of the change of soil. In all cases the soil of the nursery or seed plantations, having been repeatedly dug over, and more or less manured, is better suited to the growth of the young plants than the soil into which they are transplanted can possibly be. When a plant is moved from one soil to another its growth is always checked, and the first step which it makes towards repairing the evil thus caused, is the formation of fresh roots; by bad planting this is made as difficult as possible to the plant.

It is hardly fair to compare together the growth of trees with that of the ordinary vegetables which are cultivated in our kitchen gardens; of course the conditions necessary to the growth of an annual, differ from those proper to the healthy development of a slow growing tree, which requires a long series of years to arrive at maturity; but even in the case of common garden crops, the same general effects to which we have just referred, may be observed. In almost every case where it is desirable to increase the development of roots, phosphoric acid is of the greatest value. When we wish to force young plants, to push them forward as fast as possible, so that their roots may get some hold upon the soil, the superphosphate of lime is one of the best manures we can employ. The mode in which that substance brings forward a crop of turneps is an illustration of this, and the remarkable way in which it assists the growth of the young plants, getting them rapidly into the rough leaf, and producing a more marked influence on their growth then, than it does at any subsequent period, appears to depend chiefly on the fact that it aids them in the formation and development of roots.

Superphosphate of lime is, therefore, a very valuable fertiliser in the hands of the planter, but in using it he must always remember, that as his plants must necessarily absorb the whole or the greater part of the soluble manure which he gives them, he must take care not to give too much. He must not suppose that if one handful will do good, therefore ten handfuls will do more: it is very easy to give too much, and plants, like animals, may equally be injured by over feeding or by starvation.

ACCOUNT OF MRS. LAWRENCE'S GARDEN, NEAR LONDON.

BY H. C. KEMP.

[We quote the following description of the place most celebrated in England for the high cultivation of the plants and the richness and variety of the exotic flora it contains. Mrs. Lawrence's plants are as nearly perfect as plants can be, in beauty of growth and completeness of development, and she uniformly carries off the majority of the prizes at the great London shows, where she has the combined skill of all England to compete with. The account is taken from an interesting little volume lately received, on the *parks and gardens* about London. Ed.]

Mrs. Lawrence's gardens at ***Ealing, Park*** have acquired, and justly, a universal reputation, on account of the superb collection of plants which they contain, and the general taste displayed in the arrangement of the place. As they are most generously thrown open to the public for one day in each week during the summer, they demand to be pretty fully described.

The entrance to the park is at the eastern corner, and after passing through the gates, the drive turns to the left, and crosses the open park till it reaches a long piece of artificial water, over which it is carried by a low bridge,—which is in fact a neck of land dividing the lake into levels,—and soon arrives at the house. There is also a walk from the lodge to the house, just along the belt of plantation which covers the northern boundary. In the lake is a pretty island of weeping willows, which shows well from the house. The drive, walk, water, &c., were planned by Brown; but the southern belt of plantation was afterwards thinned out with great judgment and effect by Repton, who saw that it was concealing the views into the country across the Surrey Hills, and of the Kew Pagoda, gardens, &c., and caused several varied openings in the line of plantation to be made, thereby greatly enlivening and expanding the place.

From the house, which is so unfortunately contrived that the offices are on the south side, and can only be gained by passing the principal entrance door, an opening through an architectural wing wall at the north end brings us at once into the pleasure grounds. This wall is also used to connect the house with a conservatory, which stands on the right as soon as the garden is entered, and is generally filled with Camellias, or other large flowering plants that are not grown as specimens.

At the other end of the house, a short colonnade is thrown out, and supported by low evergreen trees, through which the access to what is called the "Italian walk" is given. This is a straight walk on a descending slope, with pairs of small figures on pedestals at either side of it, and good specimens of Irish yew between these. It terminates in a moderately large circular basin of water, in the center of which, on a sufficient pedestal, is a figure of Apollo. The walk is kept confined towards the end by large evergreens, which narrow the vista, and restrict the view pretty much to the principal terminating object in the middle of the basin. The figures on the pedestals at the sides are arranged in pairs; on one pedestal Mars and Venus being placed, on another Cupid and Psyche, on a third Castor and Pollux, &c. The general effect is classic and elegant, and consistent with the style of the house.

The lawn view from the front of the house is rich and varied. A great many specimen plants, especially of the coniferous tribe, are scattered about upon the grass, and their lower branches lie down upon it in the most graceful manner. A rustic arch, through

which a small fountain is seen, and some fragmentary classic ruins, jut out from the mass of trees and shrubs at different points along the northern boundary, and prevent the abundance of green vegetable objects from degenerating into sameness. Certain cross avenues, however, break up the principal glade more than is desirable. One of these avenues is of *Cupressus macrocarpa*, backed by mixed evergreens. Near the house among other choice specimens, is a large plant of *Arbutus procera*, which, with its smooth stems, and fine clusters of fruit in autumn, has a striking appearance. *Garrya elliptica* is also large and handsome, and is a most valuable shrub for winter flowering.

When the basin of water is reached, it is found to contain four other figures on pedestals, one of them representing Neptune, and another a mermaid, and the remaining two herons. On the east and west sides of this pond, the ground rises into a bank, with large masses of evergreens on the summit. The bank to the east is the highest, and has a splendid Cedar of Lebanon upon it, the branches of which are held up by ivy covered props, so as to allow of its being walked under. Close to this bank is the dairy, a pretty object, and decorated inside with a row of busts on brackets against the upper part of the walls, with flints, shells, &c., on part of the shelves. The door is of stained glass, with wreaths of roses and other flowers.

In the neighborhood of the dairy, under the large evergreen trees, is an oval arch, formed with masses of fused brick, and supported on either side with a miniature rockery of the same material, clothed with ivy, &c. The design of the aperture is to afford a sudden and confined view towards the park, embracing part of the lake, on the margin of which latter some masses of fused brick have been set up to form an object to this view.

Were the scene more definite and contracted, and did it embrace one principal and striking feature, it is probable that this idea of an oval opening, which starts from the level of the ground, and is about the height of a full-grown man, would be very effective, by yielding a kind of telescopic view without the awkwardness and trouble of having to approach so closely to a smaller aperture, or to move about with effort in order to obtain the desired survey. A better example occurs on the outer side of the round pond, where, after threading our way amongst large laurels, and other evergreens, which group themselves into a natural retreat called the Leicester bower, and turning at length between shaded masses of fused brick, which furnishes a shaded home for ferns and alpines, we come all at once to another oval aperture, through which we look out to the pond and its figures, with the grassy bank and noble evergreens beyond. Here there has been more preparation, by a winding and uncertain path, in deep shadow, among imitation rocks, of which the arch forms a part; and the burst of light which we suddenly obtain through the arch, with the limited nature of the view, and the existence of a more definite object in the pond and figures, render this much more satisfactory, and, indeed, decidedly artistic.

We cannot but remark on the felicity with which the oval figure has been chosen for framing these little scenes, and how well the shape and size of the aperture fulfil its intention. Any more irregular opening would have the effect of scattering too much the objects to be revealed, whereas this serves to concentrate and confine them. A circular aperture, again, would produce the same bad result as an irregular one, unless it were quite small, when it would have to be looked through with effort, and the whole scene would be taken in only by degrees. The oval, on the other hand, as here adopted, is in itself a beautiful figure, and directly the eye catches it, all that is wished to be seen through it is exhibited at once. The suddenness with which the view opens upon us is fully half of the charm. Any gradual unfolding of the scene would ruin it.

Following the walk which runs along the boundary of the pleasure grounds, we see how nicely these are separated from the park. A very low hedge is placed in the bottom of a hollow, and its line its broken by a few dwarf evergreens, such as Rhododendrons, scattered here and there regularly along the inside. Standing on the walk, therefore, or the lawn, we scarcely observe this boundary line, because it is so low and unobtrusive, and does not at all arrest the sight, while it is quite hidden from the other side of the place.

Around some of the plantations at this end of the park, luxuriant masses of the double-blossomed furze form a broken and beautiful fringe, carrying the line of plants well down to the ground, and blending it with the grass, besides making a very brilliant display in the blooming season. Tufts of this furze, or of various brooms, scattered along the margins of park plantations, would often be exceedingly valuable in giving roundness and finish to their outline, and would furnish splendid patches of color in spring, besides being green and lively through the winter. In this part of the pleasure grounds, the varied openings occasioned by Mr. Repton's operations on the southern belt are especially conspicuous and important, as that belt is so comparatively near.

Two other avenues, besides the one already named, cross the principal lawn of the pleasure grounds. That farthest to the west is composed of Deodar cedars, with a row of Irish yews in front of each line of them, the yews alternating with the cedars. These deodars, of which there are some in other parts of the gardens, are very beautiful specimens, and must, in time, become grand objects. This avenue is terminated by a small temple at the north end, containing a statue of the Dying Gladiator. The temple was much used by Pope when Lord Warwick was proprietor of this place. Another avenue is of *Araucaria imbricata*, the plants being very regular and healthy, and having lines of *Cupressus juniperoides* in front of them.

In addition to these avenues of choice plants, great numbers of rare specimens are placed about the lawn. There is an unusually large and good *Abies Webbiana*, *Aralia japonica*, a fine Catalpa, many scarce and beautiful pines, firs, &c., and some very excellent variegated hollies.

At the west end of the garden, a cedar of Lebanon has been used as the nucleus of a small detached plot, planted to resemble a cemetery of the Crusaders said to be still existing at Jerusalem. Its surface is varied by masses of fused bricks, thrown up into irregular shapes, and formed in one part into a rude and picturesque arch. Groups of the same materials are continued from this spot into the pleasure grounds, at the side of a secluded walk, which affords an exit from the place towards Brentford. All these masses are partially clothed with ivy, and having generally a rugged outline, it is remarkable how speedily the ivy disguises the meanness of the material, and converts it into a beautiful feature. Irish yews, junipers, savins, weeping willows, &c., constitute the other and appropriate ornaments of the so-called cemetery; which must be looked at solely as a picturesque episode in the garden, and without reference to its avowed purpose.

Nearly adjoining the plot just described is a large circular hollow, surrounded with masses of shrubs and trees, and having a fountain in the center, which plays over a pile of moss-covered rocks. On the west side of this spot is another fountain, half shrouded by trees, which are mostly weeping willows. Many of the trees here take picturesque forms, and are covered with ivy. The water trickles over masses of stone, clothed with many species of wild plants, and is very pretty in summer, or when the sun is shining. This little scene is quite complete in itself, and being in a corner, and a hollow, much shut in by plantations, it furnishes an agreeable change.

In a survey of these pleasure grounds there is much to satisfy and please. A great deal of variety, and several delightful minor compartments, are secured. In general, too, there is much harmony and good taste shown in the arrangements and the decorations. The leading cause for regret is that the breadth of the lawn has been sacrificed to obtain the cross avenues we have spoken of. These lines of plants cut up the lawn very much, and destroy all appearance of openness or extent. Two of them are likewise altogether without an object; and as the plants in them all grow up, we can only conceive of their becoming still more objectionable. Scarcely any consideration can ever justify the use of lines of plants *across* a lawn that comes into view from the house; and the only show of reason which can be assigned for their use in this case is, that they supply the means of exhibiting some highly beautiful plants to great advantage.

A quiet walk from the western side of the lawn leads through the plantations, beneath an arched trellis embowered with climbers, to the department in which the plant houses are situated. And here the real treasures of the place begin to develop themselves. In regard to the size and rarity of the specimens, the superiority of their cultivation, and the quantity possessed, there is probably no collection in Europe which, in all these respects, can at all rival this.

A walk through the plant houses supplies continual food for wonder and admiration. The conviction is pressed upon us at every step that the power of cultivation "can no further go." And everything is done with a liberality as to space and conveniences which is quite of a piece with the fame of this establishment. The well-known success which attends the exhibition of plants from this place at the great metropolitan shows, will no longer be matter of surprise after the collection is seen. The only occasion for astonishment will be that any other competitor should ever be able to carry off the highest prize.

At the front of the principal group of plant houses is a somewhat square area, arranged as a flower garden, and having little wire temples, as supports for climbing roses, at the corners. Walls covered with climbers inclose it at the sides, and the charming *Clematis montana* is among the most conspicuous plants on these walls. There is a fountain in the center, and some vases are placed about in parts, while masses of stones at the base of the buildings, and in front of them, receive a variety of pretty trailing and alpine plants. The flower-beds are cut out of the grass, and are each furnished with a single kind of plant, in the usual manner.

The houses, which are composed of a series of span roofs, slightly varying in height, occupy a considerable space, but they do not present one uniform front. The two end compartments, which are supposed to be about 20 ft. wide by 75 ft. long, and each of which is covered by a span roof, are devoted to greenhouse plants. Between these and the centre of the group, there are two short houses, about 15 ft. long, against the back wall, leaving an open gravelled space in the front of them. These small houses are assigned to tall Cacti, large specimen plants, or a mixed collection. The central compartment is about 55 ft. wide, by 75 ft. long, and is roofed by three parallel spans, the middle one being highest. The whole of this portion is kept at stove heat, and it has a glass partition across the middle, separating the stove plants from the orchids. Two other glass partitions in the back part divide it into three unequal spaces, the larger middle portion being given up chiefly to the *Amherstia*, a small aquarium, and some mixed orchids and stove plants, while the side divisions are filled with orchids alone.

The first thing which we notice on entering the plant houses is, that they are raised fully 3 ft. above the ground level, and that therefore they are very dry, and may be made as airy as can be desired. Our next observation is that, although preparing the plants for

exhibition is one of the primary objects of consideration here, yet the houses are constructed and the plants arranged so that they can be examined comfortably and displayed well. There is no want of neatness and finish in the buildings; and the stages, paths, &c., are contrived, and the plants disposed, as if everything were intended only to be enjoyed at home. There is no crowding, no inconvenient effort to make the most of the space, no putting the plants where they cannot be fully seen. Everything is planned with great simplicity, and each plant has a sufficient space accorded it to allow it to stand perfectly free, and bring every part of it into view.

A leading feature of the collection here is that the plants grown are all of the most ornamental kind. Although the bulk of the specimens are of rare kinds, and many of them are quite new—for Mrs. Lawrence spares no expense in obtaining the first available plants of a good new species, and often procures the original specimen—yet none but the really showy members of each tribe are cultivated, and everything that is not fit for making a fine display is excluded. Hence, there is scarcely a plant in the collection that does not, at some season of the year, perform an important part in maintaining its attractiveness; and all are capable of being so thinly placed about on the stages that each will have ample room to grow and to exhibit itself.

To obtain *large* specimens is another grand point aimed at here. But this is only sought in so far as it is compatible with extreme *density* of habit, and a complete *mass of bloom*. Plants that look old or ragged are not allowed a place. And the desired result is attained by growing the plants in large pots, (only the common pots and no kind of tub being used,) and employing rather coarse and lumpy soil, partially mixed with drainage materials. There is also a regular system of pruning and training adopted from the earliest stage of each plant's growth, so that it is never permitted to become thin or straggling. With many of the species, the shoots of young plants are stopped back several times in each year, and the most careful and constant attention is given to keep each shoot in its right place by sticks and ties. This plan, of course, imparts to the plants a somewhat formal appearance, and causes some of them to present a little forest of supporting sticks. But as the specimens become old enough to bloom well, they are less rigidly pruned, and begin to require fewer sticks, acquiring altogether a more natural aspect. Indeed, it is pleasing to observe that it is now becoming more the fashion to allow plants to take their natural shapes, with less help from sticks, and only so much pruning as will secure a broad and close mass of flowers.

Provision is likewise made here against the loss of larger specimens, or the having to discard them on account of their size or poorness, by bringing on a succession of plants in different stages of growth; young specimens being generally found more healthy, and richer in all the qualities of show plants, except mere size.

For the facility of removal, and also to render each plant more manageable, and prevent the stronger growing ones from injuring the others, everything is here grown in pots, and not planted out. When, therefore, a plant becomes large, or bare, or unhealthy, or in any way undesirable, it can be instantly taken away, without making any gap in the collection. And for the recovery of specimens that may have fallen into bad health, or for retarding the bloom of those which are wanted at a particular time, or for retaining any specimens in bloom that may be required for a special purpose, there are various subordinate houses, pits, and large wooden boxes or frames, in which any of these objects can be quietly carried out. In moving about large specimens, too, a contrivance is here adopted which is very simple and efficacious. It consists in putting an iron hoop capable of contraction or enlargement according to the size of the pots, round the pot to be moved,

just beneath the rim. This hoop is furnished with two strong hooks, one on each side, beneath which two hand spikes made to fit them are placed, and the plant is then carried as if it were on a hand-barrow.

In the greenhouses the most perfect ventilation is provided for by opening all the side lights, so that during the hottest weather the houses may be kept comparatively cool; and, after the occurrence of great moisture, they may likewise immediately be dried. Beneath the stages, moreover, there are small slides or shutters, for further ventilation; and these are very useful in winter, as the air they will admit passes over the heating pipes. By their means, likewise, the floor and lower parts of the house can be kept dry. The stages are, for the most part, covered with a thin coating of gravel; and, to bring the plants as near as possible to the glass, and secure to them a greater amount of air, and guard them against becoming too moist, each of the specimens is generally raised on a large pot, so as to stand from 18 to 30 inches above the stage.

It will of course be impossible, were it even worth attempting, to do more than point out some of the general features of this collection. The two principal greenhouses contain nothing but specimens. The plants in them that are most conspicuous are Boronias, Epacrises, Polygalis, Eriostemons, Pimeleas, Leschenaultias, Croweas, Chironias, Chorozemas, Hoveas, &c., with a few climbing plants trained to low trellises. *Crowea saligna*, *Coronia crenata* and *serrulata*, *Chorozema cordata*, *Pimelea spectabilis*, all the Eriostemons, especially *E. buxifolium* and *intermedium*, and the charming old *Leschenaultia formosa*, are some of the plants here cultivated, which flower abundantly in all stages of their growth, and are of a free and excellent habit. Some idea of the size of many of the plants will be conveyed by mentioning that *Pimelea spectabilis* is 27 feet in circumference, and that, from the edge of the pot over the whole surface of the plant, there is scarcely space enough to allow of the hand being introduced between any of the branches. Nearly every one of the shoots is crowned with a bunch of blossoms in the summer. *Gompholobium polymorphum grandiflorum* is treated as a bush, and makes a beautiful plant in this state.

In the stove the plants are equally good of their kind. A great many handsome climbers are here grown to trellises, and a few of this tribe are also trained up the slender pillars which support the roof. The *Allamanda cathartica*, *Schotti*, and *grandiflora*, *Stephanotis floribunda*, *Convolvulus pentanthus*, *Hoya imperialis* and *Bedwilli*, several species of *Ipomœa*, *Echites*, *Æschynanthus*, and *Combretum*, *Clerodendron splendens*, &c., are some of the principal dwarf climbers, and are in great perfection. *Medinilla speciosa*, a rare and exceedingly ornamental species, with very large leaves and conspicuous drooping spikes of pink flowers succeeded by showy crimson fruit, is in an excellent state, and blooms for several months.

A glass partition, with a light iron frame (the rest of the houses being of wood,) separates the commoner stove from the orchid houses, and from the compartment devoted to the *Amherstia*. Of this last, there is an extraordinary specimen, which is, perhaps, the greatest feature of the whole collection. It is now quite a little tree, although it has only been here four or five years, and has flowered here for the first time in Europe, very few other plants of it existing in England. At the present time (January, 1851) it is again showing a quantity of bloom, which usually expands about April. The leaves, which are pinnated, and are paler in the young state, are of the handsomest and amplest character, forming a head of the most graceful kind. The flowers are vermillion-colored, and are produced in large drooping racemes, after the manner of a laburnum or *Wistaria*. It is a native of the East Indies, from whence it was obtained through Dr. Wallich; and has reached its present state of perfection here in a surprisingly short period of time.

As it deserves, the plant here receives every attention. It is placed near the back of the house, and grows in a large tub, plunged in a bed of bark. An extra heating pipe passes round the plant, within about two yards of the tub, and an open zinc gutter for containing water is fixed to the top of this pipe. In the front of the plant is a small basin for aquatic plants; and provision is made for spreading over the plant, beneath the glass, an oiled calico screen, which runs on rollers, and which, when used, at once furnishes any required shade, and protects the leaves of the plant from the water that might drop from the roof. A high temperature and a most atmosphere are preserved.

Besides some interesting aquatics, a number of gold fish are kept in the basin opposite the *Amherstia*, which is, moreover, furnished with a fountain. The back wall of this house is also partly clothed with ferns and orchids, and a few of the more purely tropical stove plants and orchids are placed at the sides of the house; but a considerable open space is wisely preserved in the middle, so as to give more consequence to the *Amherstia*, and cause it to be better seen. The *Barringtonia*, with its noble leaves, seems quite at home in this close stove; and there is a large plant of the curious *Grammatophyllum*, with a very beautiful climbing *Lycopodium*, which has large bluish fronds.

One of two small orchid houses on either side of that which contains the *Amherstia*, is used for Mexican species, and the other for such as require a rather higher temperature. The collection of both these tribes is good, and the plants well grown, but not remarkable. By the side of the paved path, and partly under the stage, there is an open channel or gutter provided for carrying off any water that may be used in syringing the plants or washing the paths.

Behind the larger group of houses there is a very nice heath house, with a western aspect, and full of the choicest specimens in admirable health. Other and smaller houses are devoted to Pelargoniums, which are placed on stages, to Azaleas, to stove plants requiring bottom heat, and to miscellaneous articles. The Azaleas stand in pots, like the green-house specimens, and are most splendid examples of cultivation. As with the green-house plants, (and also with the heaths,) there are successional or younger specimens, which are preparing to supply the place of the larger ones when these wear out or become shabby.

A small stove, which contains a bark bed, in addition to the usual heating power, is almost wholly filled with Ixoras of different kinds, plunged in the bark. They are superb plants, and this method of treatment keeps them very luxuriant. *I. javanica*, which is nearly new, has attained a considerable size here, and produces its pale orange flowers most profusely. An extraordinary specimen of *Gardenia Fortuni*, some Rondeletias, &c., are kept in this house likewise; and a wire trellis is beautifully covered with the charming *Dipladenia crassinoda*. Another small stove, with a similar bark bed in the center, and heated by a tank traversed with hot-water pipes beneath the bark bed, is occupied with various kinds of *Æschynanthus*, Gardenias, and such other plants as flourish best with bottom heat. The very best effects result from this mode of plunging certain kinds of stove plants in a material supplying bottom heat, as they never thrive half so well under any other system of management.

A span-roofed house has lately been built for the East Indian orchids, on the north side of the area containing the plant-houses. It is heated by hot-water pipes, which pass all round it in the ordinary way, and has no other heating material. The species belonging to the Vanda tribe are chiefly grown here. There are some noble plants of *Aerides* and *Argræcum eburneum*. And the entire contents of the house are so excellent that they are only surpassed by Mr. Rucker's collection. It is a most desirable plan thus to

bring this class of orchids together in one house, as well because they can thus be more appropriately treated, as on account of the effect produced by such a combination of exclusively elegant forms.

Calceolarias, Cinerarias, tall Cacti, and many tribes that we need not mention, are cultivated here in the best order in other houses and pits. Our notice, indeed, can by no means do justice to the place, which contains, even among its minor features and mechanical agents, very much that must interest the general cultivator. For example, there are several large box-like frames, made high enough to contain moderately large specimen plants, and capable of being covered with oiled calico or with glass lights, and ventilated by small slides at the ends, which, with an eastern aspect, are well adapted for receiving plants that have been newly potted, or such as are out of health, or those which may be wanted to be kept from blooming so soon, or to be preserved longer in flower. There are also some very convenient span-roofed pits, the lights of which work on a kind of hook-like hinge at the top, and are fastened down by iron pins in windy weather. There can be little doubt that pits of this description, made about 7 ft. wide and 4 ft. high (or a little higher) in the center, with the lights to lift up (not slide) from the side, and capable of being taken off altogether if required, are in all respects the cheapest and the most convenient, and the best structures in which to grow those green-house plants that may be wanted for decorating a conservatory, drawing-room, or other place where flowers are chiefly demanded.

As a screen to some of the out-buildings in the plant house department, a strong privet hedge is employed, the treatment of which struck us as worth mentioning. The top of it is cut into a series of crescent shapes, the hollow of each crescent having the closely-pruned head of a standard rose just rising above it. A character by no means commonplace, and which may serve as a hint to improve upon, is thus obtained.

The period at which the greatest display of flowers may be seen at this place, is during the month of May, when the majority of the house plants are in their highest glory. In June, also, they are almost equally fine; and in so large an establishment there will, of course, be many plants in flower at all seasons.

HOW TO HAVE ROSES IN WINTER.

BY WILLIAM CHORLTON, STATEN ISLAND, N. Y.

Dear Sir—As the winter flowering of roses is a matter of some importance to all lovers of flowers, perhaps a few plain directions by which they may be successfully grown and brought to bloom with little trouble or expense, from November till May, will be of service in your journal.

My present purpose is with the amateur and those having small green-houses managed by themselves, without the assistance of professed gardeners. How many of these structures do we see which are in themselves unsightly objects, but which, by a little more knowledge in the matter, would become gems of beauty. It is the duty of all competent gardeners to assist in the general dissemination of the knowledge they possess; to lend a helping hand to the enthusiastic lovers of flora, many of whom, for want of a little practical information, meet with constant vexation in their little operations. Our calling will never be injured by such a course. No profession will ever advance one jot the faster

towards perfection, or be better paid by wrapping its details in mystery. Disseminate and diffuse knowledge, and the more extensively and enthusiastically will it be sought after, the greater in number will be its proselytes, and the more the demand for those who practice in its various spheres. Circulate experience, and pedantry will fly before it. Extend true practice, and pretension and empty boastings will hide their heads, leaving an open field for improvement.

But to my point. In the first place, select in the spring as many good stout bushes as there is house-room for, and let them be of the following kinds: (Chinese)—Queen of Lombardy, Mrs. Bosanquet, Agrippina, or Cramoisie superieure, old China, and Triumphant. (Tea scented)—Antheros and White Tea. (Noisette)—La Pactole. If there is room for spreading branches, Lamarque and Cloth of Gold, or Solfaterre, may be added, which, if allowed to grow without being shortened-in, will bloom freely. (Bourbon)—Hemosa and Souvenir de la Malmaison. Place these in pots suitable to their size, in a mixture of two-thirds rough turfy loam, and one-third good rotted stable manure, (incorporated well together, but not made fine.) Let the pots be well drained, and prune in the plants rather close; plunge the pots in the soil on a dry bottom in a shady place, for the summer. In the fall, if they have filled the pots with roots, and have made corresponding top growth, remove them into larger, being careful not to break the ball of earth; but do not remove them unless they require it. If not repotted, some of the surface soil should be removed, and the pot again filled up with fresh compost of the same kind.

If the foregoing preparation of the plants has not been made in the spring—the following course may be pursued. Lift carefully about the middle of September, a sufficient quantity of good plants of the foregoing sorts, and pot as above directed. These will not bloom so abundantly in November and December, though quite as much so afterwards. About the beginning or middle of October, according as the weather is mild or cold, wash the pots clean, and remove them into the house. At the same time prune away any dead or weak spray, place as near the glass as possible, *and exposed to the sun.* (The old exploded tan-bed is of little use where this is attended to.) Admit air freely over the heads of the plants, but by no means from front lights or outside doors, which only produces cold and damp under drafts. This point, in all plants growing in glass structures, is not sufficiently attended. It only reduces the temperature below, leaving the head of the plant warmer than the roots, causing stagnation to the growth, and encouraging, (in this climate more particularly,) the progress of fungoid vegetation, the sporules of which are continually floating in countless myriads in the atmosphere, ready to develop themselves upon various plants under favorable circumstances, the result of which is mildew or blight, in its various forms. It sometimes happens, if the weather is cold and damp, that roses are mildewed when taken up for housing. If the above directions in airing are attended to, and a little fire heat put on in the day in damp weather, it will soon disappear. If it should show itself any time afterwards, put on a little extra heat, and admit air from the top freely on sunny days, but keep the house closely shut up in stormy, and dull damp weather. By following this advice nobody need suffer from mildew when forcing roses. When, in the autumn, the nights begin to be cold, a little fire will be regularly required, increasing it gradually as the cold increases, observing to keep the temperature throughout the season at about 55° at night, allowing it to rise with the sun's rays to 70° or 75°, but not more than 60° in dull weather. Never use more artificial heat than is absolutely necessary. When the soil has become somewhat impoverished, say the middle of January, commence giving a watering with liquid guano, and continue it once a week, using one ounce to one gallon of water, or else taking instead, diluted drainage from a dung hill,

always applying either *in a clear state.* This will wonderfully improve the color of the flowers, and invigorate the plants. The red spider (Acarus,) which is sure to make its appearance, and will destroy all success if not kept down, may be eradicated by syringing occasionally with a solution of whale-oil soap, using one ounce to two gallons of water. Be careful to apply the wash to the *under side* of the leaves, as it is there mostly, where the pest lodges—using it in the evening, after a bright day, as too much moisture in the atmosphere is apt to spoil the flowers. The green fly (Aphides,) is easily kept under by occasionally fumigating with tobacco. No further care is required.

By following the above directions, any person with from twenty to thirty good strong plants, may gather a boquet of Roses every morning from the beginning of November to the latter end of May, previous to, and after which, there are plenty out of doors. A small green-house *well exposed to the sun*, and a small plot of ground outside, will produce roses every day throughout the year.

The above short list is not a tithe of the roses suitable for forcing, but they are sorts which will bloom without intermission so long as the plants are kept healthy, and freely exposed to the sun's rays. There are also many which have larger and more double flowers than some of them, but those mentioned are of different and distinct colors, from white to dark crimson, (including yellow,) and are beautiful in the buds, which are much more prized than the flowers by many. Hoping the above short hints may be useful—I am yours most respectfully, Wm. Chorlton, gardener to J. G. Green, Esq.

Staten Island, August 25, 1851.

STUDIES IN VEGETABLE PHYSIOLOGY—THE ROOT.

BY A. A. FAHNESTOCK, SYRACUSE, N. Y.

In explaining the history of a plant, it is necessary to begin with the most important *parts*. The root is that organ which, in contradistinction to the stem, seeks to exclude itself from the light and air, and descend into the medium of the earth. Stems and roots, though sufficiently distinct in most plants, are in others often mistaken for one another; but the latter may be readily distinguished from the former by having no buds, and one regular ramification. The principle office of the root seems to be, to supply a copious quantity of nutriment, or sap, for the maintenance of the plant, which it does by "*Endosmosis.*" This term may be explained by the following example. When two liquids of unequal density are separated by a permeable membrane, the lighter liquid, or the weaker solution, will flow into the denser and stronger with a force proportioned to the difference in density—but at the same time a small proportion of the denser liquid will flow into the weaker, which is called "*Exosmosis.*" By the examination of any embryo, of the exogenous structure, we may gain a good idea of the peculiarities of the root. The radicle, or pre-existing axis grows in such a manner as to elongate throughout its whole extent, showing that it is not root itself, but merely the first joint of the stem, which thrusts itself downwards into the soil, while it raises two cotyledons, which supply the place of leaves until the cauline ones appear. Contemporaneous with this elongation of the radicle, a new and different growth takes place at the lower extremity, in a downward direction, which forms the root. The root, then, is a new formation of cells from the root end of the radicle; it commences by a number of very lax, tender cellular tissue, resting upon a blunt cone of woody matter, composed principally of woody tubes, con-

nected with the alburnum. The accumulation of cells is not upon its sides, but at the extremity under the thin epidermis and the superficial cells. The division of the cells from this point proceeds from below onwards, those which lie behind quickly extending to their full size, and remain in that state, while those which approach the apex multiply by continual divisions. In this way the root keeps on growing, and may be compared to an icicle, which lengthens from the point only; the only real difference being that the icicle elongates by continual accretions from the outside, while the growth of the root is from the inside. As this growth of the root is made from the under side of the extremity alone, it follows that that part is always clothed with a vitally active tissue. "The new cells,* however, do not occupy the extremity alone, as is commonly but incorrectly stated; this is capped, as it were, by an obtusely conical mass of older cells, consisting of the superficial tissue of the end of the radicle, pushed forward by the cell multiplication that commences behind it, as already mentioned.

"As the orignal cells of this apex wear away or perish, they are replaced by a layer beneath, and so the advancing point of the root, consisting, as inspection plainly shows, of older and denser tissue than that behind it, (the point of every branch of the root is capped in this way,) it follows that the so called *spongioles*, or *spongelets*, have no existence. Not only are there no such organs as are commonly spoken of, but absorption does not evidently take place to any considerable extent, through the older tissue of the point itself." Roots absorb nourishment by *endosmosis* throughout the whole of the newly formed tissue, and especially through the hair-like prolongations, commonly called the *fibrils;* these capillary tubes are of great tenuity, and have extremely delicate walls, and perform a more important part in absorption than is generally supposed. They perish soon as the growing season is ended, or when the roots become old and hardened—"at the same time the external layer of cells that bears them, at first indistinguishable from the parenchyma beneath, except perhaps in the size of the cells—hardens and thickens into a kind of epidermis, or firmer skin, so as to arrest or greatly restrain the imbibition. This epidermis of the root consists of less compressed cells than in other parts exposed to the light, and is distributed to stomates, or breathing fibres." The growth of the root keeps pace with the stem, as the latter shoots up and becomes clothed with branches and leaves, from which water is exhaled during healthy vegetation; the former grows onward, still renewing the tender hygrometrical tissue, through which the absorption required to restore that which is lost by elaboration, or consumed by growth, is principally effected; hence the danger of removing trees during the summer season, or when the roots are in rapid action. The growth of the branches and roots being simultaneous, while new branches and leaves are developing—the roots are extending at a corresponding rate, and greatly increasing the absorbing points, they cannot now be removed with safety to the tree, and at the very time when their aid is most required. But when the growth of the season is over, the leaves grow languid, and the rootlets also cease to grow, as the tissue of their extremities not being renewed, gradually becomes hardened, and loses its absorbing powers. This marks the season for transplanting, (namely,) before the growth of the season has commenced, or in the fall, after it is made. This elongation of the roots by their growing points alone, is admirably adapted to the situation in which they are placed, growing, as they do, in such an unequal medium as the soil. If the roots increased in the same manner as stems, they would be forced wherever the elongating force was insufficient to overcome the obstacle, or wherever this force was most powerful, and they would be thrown into all kinds of contorted shapes, very ill adapted to perform the services for which they

* See Gray's Botanical Text Book, new edition, p. 31.

are required. But, increasing as they do, by their points only, they insinuate themselves into the crevices of rocks, or yielding parts of the soil, and afterwards, by their expansion in diameter, enlarge the cavity, or when arrested by any obstacle, their advancing points follow its surface until it reaches a softer medium. In this manner they rapidly extend from place to place, as fast as the nourishment in their immediate vicinity is consumed. Thus roots extend in whatever direction the soil proves most favorable to their growth, without supposing any instinct or pre-science on the part of the vegetable, as we have before stated. "The advancing extremity of the root consists of parenchyma alone, but bundles of vessels and woody tissue appear in the forming root soon after their appearance in the primordial stem above; these form a central woody or fibrous portion, which continues to descend as the growing apex advances, sometimes, although not usually, enclosing a distinct pith, as the wood of the stem does."* We have taken the root as an epitome of the whole plant, for in its whole development it produces no other parts, nothing but naked branches emanating from one particular part of the root, but indiscriminately over the whole of the surperficial surface, all tending to increase the amount of absorbing surface. In reply to the statement that roots produce no other organs, there is this abnormal exception, namely, that of producing buds, which spring up into branches, and are clothed with leaves. Although the roots are not naturally provided with buds, yet, under certain circumstances, they will produce them; that for instance when a poplar or apple tree, gorged with sap, is cut down, the root will send up innumerable branches. The roots of the osage Grange habitually give rise to such stems, hence the utility of it in planting hedges. Some plants present a still more striking phenomena, such as the Bryophyllum, which has been known to produce buds on the margins of its leaves; all such buds are said to be adventitious.

"The root has been illustrated from the highest class of phenogamous plants, in which the original root, or downward prolongation of the axis continues to grow, at least for a considerable time, and becomes a tap-root, or main trunk, from which branches of a larger and smaller size emanate. Often, however, this main root nearly perishes, or ceases to grow, and the branches take its place. In some plants of the highest class, (in the gourd family for example,) and in nearly the whole great classes to which the grasses, and lilies, and palms belong, there is no one main trunk or primary root, from which the rest proceed; but several roots spring forth simultaneously f rom the radicle in germination, and form a cluster of fibres of nearly equal size. Such plants scarcely exhibit the distinct opposition of growth in the first instance, already mentioned as one characteristic of phenogamous vegetation. Most phenogamous plants likewise send forth *secondary* roots from the stem itself, the only kind produced by cryptogamous plants. Roots vary much as regards their duration, and have been divided into three grand classes. First, into *annuals*, which are those that spring up from the seed the first season and die; such plants are composed mostly of fibrous roots, which act a powerful part in absorption, but are good for nothing else. These fibres usually proceed from the sides of the tap-roots, or else the whole plant divides itself at once into numerous branching fibres, such as the *grasses*. The food which such a plant absorbs, after having been digested and elaborated in the leaves, is all expended in the production of branches and flowers. The flowering process and the maturation of the fruit greatly exhaust the resources of the plant, consuming all the nourishment which it contains, or in storing it up for the future offspring, and, having no accumulation of sap, the root is unable to supply the increasing demand, and the consequence is, it dies as soon as the growing season is over, or whenever the seeds

* Gray's Text Book.

are fully ripe. The second class compose the *biennials*, or such as live two years; these do not flower until the second season, when they die as the annuals; in this case the root serves as a reservoir for nourishing the assimilated matter, such as *starch*, *vegetable jelly* and *sugar*, (that is, its cells become gorged with these articles)—also, such roots receive the general appellation of *fleshy*, but have received different names according to whatever shape they assume. For instance, if the enlargement takes place in the trunk or tap-root, it becomes *conical*, as in the carrot. When it regularly tapers from the crown to the apex, it becomes *fusiform*, or spindle-shaped. But if it leaves the middle the largest, in which instance it tapers from both ends, it becomes *spheriform*, or turnep-shaped. If some of the branches are thickened, instead of the main root, they are said to be clustered. Such plants do consume much of the supply of sap in the production of leaves and branches, but they form a large tuft of leaves just at the surface of the ground, which supply the roots with nearly the whole summer's supply of nourishment. In the following spring, when reaction is commenced, it shoots up a large thrifty stem, with leaves and flowers, which is wholly supported by the nourishment of the previous year; and the plant, in the mean time, neglecting to form roots anew, gradually perishes from the *immense* absorption of the *external* part, (or stem.) This class includes a very large proportion of our most useful vegetables.* AUGUSTUS A. FAHNESTOCK.

FIRST FLOWERING OF THE VICTORIA REGIA IN THE U. S.

BY CALEB COPE, ESQ., PHILADELPHIA

THE great event in our floriculture world just now, is the blooming of the *Victoria*—that queen of water lilies—at the country residence of the President of the Pennsylvania Horticultural Society. Mr. COPE'S zeal and spirit in the introduction and cultivation of this noble plant, have been most satisfactorily rewarded by a larger growth, both of flower and leaf, than the most skilful culture in Europe has yet attained. We give his letter, and the interesting account of Mr. ELLIS, below. ED.

A. J. DOWNING, Esq—Dear Sir: I am sorry that you were not here to witness the excitement which prevailed on the 21st ult., when the Victoria bloomed for the first time in this country, and when my grounds seemed to be in complete possession of the public. Since that event we have had a weekly contribution of a flower, the fourth one maturing last evening. The interest felt by the public appears not only unabated, but on the increase, so that every show day we have crowds of visitors from all parts of the country.

I hope before long to send you the drawing of my Victoria house, which you request. In the mean time I send you a report from my gardener, which will be interesting to those who wish to look into the detail of the culture and treatment of the plant. If you deem any portion of it worthy of insertion in the Horticulturist, you can make use of it.

The committee on plants and flowers of the Horticultural Society, were present on the second flower blooming. They measured the petals, which they found seven inches in length, and the crown or disk of the flower three inches, thus making the diameter of the whole seventeen inches. This is three inches larger than any flower produced in England. The leaves are also six inches larger than any grown there. The natural conditions of the plant in our country are, undoubtedly, more favorable than they can possibly be in England. There the water is at 85° generally, and the atmosphere at 75°; here it is just the reverse, which is undoubtedly more like its native country. I am satisfied that we have

* Gray's Botanical Text Book.

hit upon the right method of cultivating the plant; and that both flowers and leaves are equal to any found either in a native or foreign state, in any part of the world. Although all this has been accomplished at a great expense of money and personal exertion, I do not regret what I have done. I think I never have been so richly repaid in a similar effort. Even Mr. LONGWORTH, who regards so much of what is new in his favorite path, as humbug, says, in a letter which I received from him to day, that "there is but one plant in the world—the Victoria." He adds, however, that he will present me with a fresh-milk cow, if he fails to grow the lily without heat. By this he means that he can grow it in his pond. Our plant is also grown without fire heat. We have had no fire since the 21st June. The plant in the kitchen garden, which has had fire heat at no time, is very beautiful, and would bloom, I think, if it had been planted a month earlier. As it is, I am not without hope that it will yet give us a flower. The leaves are within three inches as large as the largest leaf spoken of by BRIDGES. Next season, if I live, I will show you a flower on the same spot, since you invite the effort.

The flower last evening was more gorgeous than any of its predecessors. As its conversion was going on, in its second stage, it seemed that the pink or red hue greatly preponderated over the white. I cut the flower, placed it on a thin circular board, a foot in diameter, which it completely covered, and sent it to a wedding party. I am in hopes that one of the buds, now visible, will bloom in season for our annual exhibition, which is to be held next week. I shall send two of the leaves—one of them to be placed under side up, so that the beauty of its architectural structure can be seen.

The Victoria is one of the few things that has not been exaggerated; nor is it possible to exaggerate it. It is truly a wonderful plant. Yours very truly, C. COPE.

Springbrook, near Philadelphia, Sept. 10, 1851.

A. J. DOWNING, Esq—Sir: As the experiment of cultivating the Victoria Regia at this place has resulted successfully, I propose giving a brief history of the attempt, not doubting that it will prove interesting to the numerous readers of the Horticulturist.

On the 21st day of March last, a letter containing twelve seeds of the Victoria Regia was received by Mr. COPE, from Sir WM. J. HOOKER, Director of the Royal Gardens at Kew. Four of these were planted in small seed pans, in loam and sand, and placed in a tank of water in the forcing house. This tank, which was five feet by six in diameter, was heated to the temperature of 85° to 95°, by a circulation of hot-water, produced by a copper box being placed upon the furnace, and an inch lead pipe, passing from it twice round the inside of the tank. A coil of half inch pipe, of about fifty feet in length, was also placed over the furnace, in order that the water might be tempered, which was destined to supply the tank. From this pipe the water dropped on a small tin wheel, which agitated the water in the tank, and dissipated the vegetable mucus or slimy matter which accumulated around the borders of it, and sometimes upon the edge of the leaves of the Victoria, after it commenced growing.

Three of the seeds germinated as follows: The first on the 10th of April; the second on the 14th of April, and the third on the 22d of May. The fourth seed failed to grow. The first growth of the lily was in form of a spear, not unlike a young shoot of grass, and attained in length about an inch and a half. On the 17th a second leaf appeared, of a form similar to that of the Calla ethiopica, being long and tapering, from a broad blade.

On the 21st a third leaf appeared of like form.

25th, the fourth leaf reached the surface, and was in the shape of an ellipsis, one end, however, being separated, till near the point where the petiole and leaf were united.

May 3. The fifth leaf appeared, which reached its maturity on the 6th; was nearly round, and measured ..... $3\frac{1}{8}$ inch. in diameter.

9. 6th leaf appeared, it was quite round, and measured at maturity, ... $3\frac{7}{8}$ " "

16. 7th leaf appeared, ... $4\frac{1}{4}$ " "

23. 8th, do ..... $4\frac{1}{2}$ " "

On the 24th the plant was transferred to the big tank in the lily house, which was especially constructed for its accommodation. It had five leaves on, the largest measured ..... $4\frac{1}{2}$ " "

28. 9th leaf appeared; measured at maturity, ... 5 " "

30. 10th do do do ..... $6\frac{1}{4}$ " "

June 3. 11th do do do ..... 9 " "

7. 12th do do do ..... 9 " "

10. 13th do do do ..... $12\frac{1}{4}$ " "

13. 14th do do do ..... $14\frac{3}{4}$ " "

16. 15th do do do ..... 18 " "

20. 16th do do do ..... $21\frac{1}{2}$ " "

25. 17th do do do ..... 29 " "

29. 18th do do do ..... 3 feet 1 inch.

July 3. 19th do do do ..... 3 6 "

9. 20th do do do ..... 3 10 "

13. 21st do do do ..... 4 4 "

18. 22d do do do ..... 4 $9\frac{1}{2}$ "

22. 23d do do do ..... 5 $2\frac{1}{2}$ "

27. 24th. This leaf exhibited a beautiful salver edge, as have all its successors, ... 5 $8\frac{1}{2}$ "

31. 25th leaf appeared; measured at maturity, ... 6 4 "

Aug. 6. 26th do do do ..... 6 $4\frac{1}{2}$ "

10. 27th do do do ..... 6 6 "

This leaf is six inches larger than any produced in England, of which we have any account.

13. This morning we discovered, to our great delight, a flower bud rising a little in advance of the 28th leaf, which was also approaching the surface. The latter presented a dark object, whilst the former looked bright, though several inches deeper in the water.

15. 28th leaf; not matured.

21. Flower opened between five and six o'clock, P. M. Color, pure white; form, globular; very fragrant; odour strongly resembles highly cultivated Pine apples. On the subsequent day the flower remains in its primitive globular form, (with the exception of slight variation,) until five or six o'clock in the evening, at which time it undergoes a complete transformation. So novel is the appearance of the transformed flower, that were we not conversant with its nature to "metamorphose," we could not believe it *possible* to be produced from the same plant. The petals become reflexed, lie prostrate on the water, and expose to view a disk, so beautiful in color and form, that I am sorry I cannot find language to describe it adequately. In its form it resembles a crown of some of the ancient kings of England; especially so when the

flower has reached its climax. The disk, which first appears quite smooth and flat, becomes in a very short time perpendicular petalus looking anthers, surrounded by others of crimson, embosomed in pure white. Thus it floats in its glory through the night, declines as the rays of light approach the succeeding morn, and ultimately *sinks* into the element from whence it arose so noble and grand.

22. 29th leaf appeared; not matured.
31. 30th do do
Sept. 6. 31st do do

Sept. 8. We have now in flower the fourth bud, and two others are seen under the water. The flowers, (one of which measured 17 inches in diameter,) are produced at the base of the leaves, which induces us to believe that as long as the plant continues to furnish *new leaves*, so long may we expect flowers. At the present time appearances are altogether very promising. There are seven leaves on the plant, some of them measuring nearly twenty feet in circumference, and a weekly succession of flower buds.

You will observe that on the 24th day of May the lily was planted in the large tank. From that time up to the 20th of June, fire heat was applied in the evening only. During this period the thermometer ranged on an average at about 85°. On the 21st of June fire heat was dispensed with, and has not been applied since. The tank had been well prepared for the reception of the plant—first, by the bottom being covered with charcoal and pieces of brick, to the depth of two or three inches, and then half a dozen two-horse cart loads of chared loam and leaf mold placed therein in the form of a mound. I would here remark that good loam alone is sufficient for the plant. A different ingredient was adopted in this, our first essay, as a similar compost was found successful in England. Some material departures from the custom there observed, have been indicated as politic in the process of our experiments.

In reference to the temperature of water in the tank, after artificial heat was dispensed with, it has, of course, varied materially, being sometimes as low as 70°, and rising to 83°. To prevent the injurious effects of the direct rays of the sun, the glass of the house is frosted with sugar of lead ground in oil. The house is generally kept very close. Fresh water is freely admitted during the day, but none at night. From the lily house, the water flows into a basin in the kitchen garden, where one of the plants of the Victoria was placed on the 25th day of June; it had then five leaves on, the largest measuring fourteen and a half inches. The plant has made a slow growth, compared to its more favored companion in the aquarium, but it has nevertheless flourished, and its largest leaf now measures 3 feet nine inches in diameter. We do not doubt our ability to grow it successfully in this position next season, when the alterations proposed to be made in the construction of the basin, shall have been effected.

Under the influence of solar heat alone, the plant has made wonderful progress, and I think its beauty and luxuriance cannot be excelled in any part of the world. We can easily appreciate the admiration and delight of the enterprising DORBIGNY and SHOMBURGH, on their discovering this vegetable phenomenon, so gigantic in its appearance, unique in its formation, and deeply interesting in its development. When we contrast the seed in its first state of germination, and by an acute observation perceive its feeble cotyledon, like a thread, endeavoring to reach the water's surface, but unable—with its colossal leaves, between six and seven feet in diameter, well may we call it a "Vegetable Wonder," and the "Queen of Aquatics." We hail with delight the promised leaf, and watch its daily unfoldings with increasing interest. When we view its shell-like appearance when first

above the water's surface, quilled together into ridge and furrow of transparent golden hues, with its dark crimson veins flowing through its much admired tissue, its superb salver edge, and its huge rope-like stems, covered with elastic spines of surprising strength, as though destined to protect its noble structure from all invasion. When we look at the short period it has taken to germinate a seed no larger than a pea, and to bring to maturity a plant that fills a tank twenty-four feet in diameter, in the short space of something like four months, well may we affirm that it deserves the attention and culture of every true lover of nature who can afford the expense. Such amateurs will surely be amply remunerated by the constant unfolding of beauties not to be equaled in any other plant known to the civilised world.

It would be doing injustice to Mr. DOWNING, did I fail to mention that the first living plants of the Victoria which have grown in this country, were produced from seed furnished by him to the proprietor of these gardens, out of a supply presented to him last autumn, at Chatsworth. These were lost by the gardener then in charge of the place, as I understand, by an accidental over-heating of the tank, consequent upon a sudden change of the weather during the night. I am, respectfully, JOHN ELLIS,

Gardener to Caleb Cope, Esq.

Springbrook, Sept. 8, 1851.

THE BEAUTIFUL IN ART.

BY S. H.—FROM THE LONDON BUILDER.

THIS brings me to the third branch of my study, viz., the beautiful in art itself. Nature drunk in by the mind, as shown under the former head, is the seed for the production of a new world,—the world of art, which exists for the same purpose as its prototype, to satisfy the sense of beauty in the human breast. From a chaos of sensations previously awakened by the aspect of external nature in the mind of man, this new and fairer creation rises. A more perfect system, freed from the blemishes and faults of the first, is thus established in the sphere of art: the materials and principles, luxuriance and comprehensiveness, are derived from nature; while the fostering love of the beautiful, as the inspiration in the soul, gives it harmonious unity and depth.

Art is therefore something more than a transcript of nature even in her highest charms: it is essentially spiritual. It does not come from nature direct, but is refined and exalted in the mind. If art were no more than a reproduction of nature, it would be the inferior, as the imitator must ever be behind the original. But art takes higher ground; she has a dignity peculiar to herself, an essence of her own, which wins her the advantage. Art appropriates the principles and elements of nature, but in their passage through the mind, a fresh image is stamped upon her types. They receive a new lustre from the soul, a ray of the beautiful from within. The artist may exercise his genius upon a perishable material, but something from the immortal part of himself has mingled in his conceptions, and this gives to works of art infinitely greater interest than their originals could have. The main difference between architecture and the other arts of design, is this—architecture springs out of physical necessity, while the other fine arts have beauty for their sole object. Architecture is the application of abstract beauty, as much of it as can be applied, to the embellishment of the useful, that is to say, to the forms and elements of necessity. I say forms of necessity; but some of the general forms of architecture are struck out or

foreshadowed by nature herself. But the disadvantage of architecture is, that the useful must, in some measure, qualify the beautiful. Painting and sculpture have beauty for their essence, but architecture is a clothing, or pervading, the useful with the spirit of the beautiful. It is, however, the human architect, so far as consistent with the different scale of his enterprise, following in the footsteps of the Divine. That the primitive wood cabin was its type, may well be questioned. Infancy is as much the type of manhood. Architecture has better types, a richer dower; it has all nature, from the human form and face, to the most insignificant plant or mineral: all yield ther lesson to the architect. It draws not literally, however, from them. It is not a direct, but an analogical imitation of nature.

But art, taken generally, is an imbodiment of an invisible archetype in the artist's mind, his *beau ideal;* but which he models upon nature as a basis: it is nature transfigured, glorified, by its contact with humanity. Of all created beings, man, particularly as refers to the manifestation of his mind and character, is the most interesting to man; an object, therefore, on which is impressed human feeling and intelligence, possesses, in consequence, a greater interest than by any other extraneous circumstances it could receive. Works of real art are the works of God brought through the mind of man; and therefore doubly "good," beautiful, and divine.

Art may, in this light, be considered as a supplement which the human mind adds to nature. It is a sequel to her original beauty. Like "the metamorphosis of things into higher organic forms," is their change from nature into art. The mind or imagination of the artist is a mirror that gives back the formal hues of nature, but heightened and refined: while painting and sculpture array with second life some glorious action, some heroic deed of the past, architecture clothes with new vitality and beauty the forms of external nature.

The sculptured Jupiters and Minervas of the ancients, and the rest of their petrified goddesses and nymphs, are therefore, as remarked under the preceding head, not copies from nature, but from a vision of beauty in the mind of the artist, inspired indeed by nature, but exalted in the mind, and possessing more of perfection than any individual.

But whilst showing the advantage of art over nature in this respect, let us do justice to the latter. The eye requires education and constant practice, even to see truly the beauties of nature. All does not lie upon the surface. In the lowest walk of art there is scope for the highest mind. The most gifted eye cannot exhaust the significance of any object, and "in the commonest human face," to quote Fuseli, "there is more than Raphael will take away with him."

We cannot compete with nature on the same ground. For the production, for instance, of powerful light and shade in a picture, an artist must take advantage of the local color of objects, and place dark ones in the shade, and white ones in the light; while, such is the intensity of light in nature, that she can produce her effects independently of local color,—effects more gorgeous and potent than the artist, with all the contrivances of art, and of science to boot, is able to reach.

Moreover, the effects in nature are nearly always fine. Natural objects, whether viewed singly, or in groups, must be almost invariably picturesque, for both the linear and aerial perspective operate upon them on the most unerring principles—an advantage which the artist, from some error in applying the science, may miss. Light and shade, and reflection, which the artist can but imperfectly comprehend and represent, are also, in nature, acting unerringly.

The artist of a fine perception, is, therefore, of all others, the least satisfied with what

he produces, as he is the most capable of seeing the truthfulness and transcendancy of nature. He is also the most capable of seeing the immense distance between her commonplace, every-day effects, and those which she sometimes exhibits to the educated and poetic eye.

The comparative feebleness of art is further apparent when we consider, in the greatest works of art, how few the beauties, how many the faults; how seldom we find a picture that is good in more than one department of the art! The great colorist is deficient in composition; one wonderful in conception and composition, may have no idea of color: while the master of chiaroscurso is a novice in everything else; suggesting the fact, that only the union of the talents of several artists, supposing that possible, could secure a full, truthful rendering of nature. Each of these important departments has had its respective master, but where is the magician who, uniting their varied excellencies in one production, can conjure up before us the entire spirit and sentiment of nature, and reveal to us the whole mystery of creation?

Besides, from nature comes every element of art; within her sphere lies all the inspiration of genius. An abstract idea of beauty, it is true, exists in the mind, transcribed from no individual object or creature. But, as Pope asks, from what can we reason but from what we know? so, we may inquire, what can we conceive and image to ourselves, but from what we have seen? The first part of genius is a strong susceptibility to the influence of beauty in nature. And the Muses were rightly conceived as the daughters of memory: the great ideas which the Raphaels and Titians have sought to embody, however gradual their growth, have been indebted to nature for every stage of their advancement.

Architecture, as we have seen, in common with all the fine arts, derives its principle of beauty from nature; but unlike the rest, it is indebted to nature for something else, closely allied to, and in some measure interwoven with the other, viz: constructive principle. Structure is an important element of architecture, and fortunately for us, the affinity between it and nature extends also to construction. Of this fact many illustrations could be given, and of the use made of it by architects. The constructive principle of St. Bride's Church steeple at London, with its spiral staircase and newal, it is well known was derived by Sir C. Wren from a common form of spiral shell. The dome of the Cathedral of Florence owes its origin to the structure of the human skull, the peculiarity of which is its combining strength with lightness. The naval architect has obtained valuable hints for ship-building from the structure of shells. The figure of the duck originally suggested the form of the ship, and certainly the finest models, the best for contending with winds and waves, are those that most resemble their original, as the Dutch galliot will attest.

But, as in art, so in science, we cannot directly compete with nature; we cannot reach her wonderful mathematical skill,—the nice balance of forces,—resistance, and strain; we must waste our material, and, after all, be behind in that certainty which characterises her engineering enterprises, which is visible in her most ordinary productions.

Let us glance for a moment over the empire of art, with an eye to this analogy with nature. In music's various moods and instruments we recognise the various hymns of nature,—the murmuring stream, the melody of birds, the wind upon the shore in "vocal reed," which are music's acknowledged types. Many oft-used expressions, as "a tide of harmony," "floods of melody," "gush of song," are confessions of this analogy. Campbell speaks of the "stormy music of the drum;" Shakespeare makes music the food of love, and compares its dying fall to a gentle wind stealing over violets; and Milton's "heavenly host"

"Sang hallelujah as the sound of seas."

In the department of architecture we shall find equal interest. The "twilight grove" is seen in the temple colonnade, or "dim religious aisle." The "awe-inspiring dome" speaks of the canopy of the skies—the celestial hemisphere—which has in some instances been its model. The beautiful curves of the capitals and shafts of the antique columns are at least suggested by lines in nature. The earliest Egyptian column was a stalk of the lotus, capped by its calix; and its base was, in all probability, the foot of the same plant, where it issues from the root.

All descriptions of design are varied pictures or reflections of nature. Whether a single edifice, or group of edifices, or picturesque avenue, be the object of our admiration as a work of art, one source of our pleasure must be a recognition of principles dictated by nature, and a recollection of corresponding effects in her wide domain.

Every true style has its types in nature, every shade of character its corresponding expression there. The principles of design have been learnt in her school. In the decoration of architecture we shall find nearly the whole of the vegetable kingdom, which, though not literally copied, are yet the most easily traced. No department of creation seems better adapted for decoration in the arts of architecture, sculpture, &c., than this: plants, their foliage, flowers, fruits, have accordingly been more extensively employed, as the basis of ornamentation, than any other objects. In some Gothic buildings the abundance of floral decorations renders them rivals, in point of luxuriance, of Nature herself. Plants were very early thus employed. The almond, pomegranate, and flowers were chosen, even in the wilderness, by divine appointment, to give form to the sacred utensils; and, down to the present time, the ivy, lotus, acanthus, palm, vine, oak, and other beautiful objects of the vegetable creation have been the subjects of the chisel, and have given life and expression to architecture and the arts of decoration.

The types of art are in nature, but art, as before shown, cannot be entirely referred to that source. The soul of man has had part, and through that part may, generally, be read much that is interesting of the character and history of the times that produced it. The monuments of art are always the true representatives of the physical, moral, and intellectual state of man. They are the exponents of his religious and political position, and indicate the exact character of his mental development at the corresponding periods of his annals. Nations have written the records of their history in stone. The temples, the palaces, the monuments of Germany, France, and England are so many pertrified poems. The Vatican, the Escurial, the Alhambra, each unfold to us more than many volumes could have done, of all that is interesting to man, of all those absorbing and fascinating subjects on which we would question the past. Catholicism has written its history, and more than is ordinarily understood by history, in the monasteries, cathedrals, and monuments of the middle ages; and, whatever be its subsequent fate, the memory, at least, of its worship will need no other shrine. Liberty, commerce, and industry have recorded their enterprise, also, in the same characters. And the monuments of municipal greatness are not among the least of the trophies and achievements of architecture. Ambition has imbodied its yearnings and its triumphs in pyramids, columns, obelisks, triumphal arches; humanity in hospitals, and schools, and institutions of benevolence; and science in railroads, tunnels, aqueducts, and bridges. The edifices of England are so many chapters of our history. The genius of a nation, as well as of the architect, is stamped upon such relics.

We have seen that art is *one* in its origin,—that its waters, however diversified their channel, flow from one fountain, and its glories, however differing in hue, are reflections

of one infinite brightness: may we not go further, and observe that art is one in its real nature and object? In the infinity of beauty and of truth, pervading this mighty universe of matter and of mind, lie the inspirations of art; and it is from his fresher, deeper insight into this inexhaustible life, that genius derives his power, and his productions their value. No matter what his tools, whether colours, or marble, or stone, or sounding pipes and strings, or cadenced words, his work is the same; his eye has looked through and beyond the horizon of his time; his ear has listened, through the discords of the present, to the harmonies of the future; his thought has pierced through the crust of the surface, to the deep beneath; and now the time is come; he has seen,—he must show; he has heard,—he must tell; he has received,—he must give; in picture, or statue, or structure, or symphony, or poem, he imbodies his results; and in all these various forms of production, whatever be the character of their design, the aim of the earnest-souled receiver, is one;—that the thing produced shall be beautiful and true.

As the artist's work is similar, so is its purpose. Like the mountain stream, which, descending from the clouds of heaven, seeks, with a widening current, the boundless ocean whence its waters first exhaled, the true artist ever strives after that whole infinity of beauty and of truth, from a detached ray, as it were, of which his course of inspired action began. In the beginning of his career there was an extension of the infinite to him,—a revelation to his spirit of a beauty and a truth, newer in kind or higher in degree, than was before known or felt: from this his labors sprang; and the true tendency and end of them is to make what he thus knows and feels, known and felt; to open to his own and all others' eyes a wider and more perfect view of that glory which has glanced upon him; and in proportion as he has fulfilled this, shall his work endure. But this is not all:—

The ruling principles also of the several arts are identical: in the expression of the same quality or feeling, the same law of means obtains in all the arts, *i. e.*, the elements must be used after the same principles, and therefore the *laws of the fine arts* are deducible from *the principles* of ART, and may be considered as a polyglot version of art-law. If, therefore, we obtain a comprehensive knowledge of the principles and laws of art, we possess the key to the intelligence and application of the laws of the arts, which are its different branches. The aim of art, in all its branches, throughout its works, is, from variety of element, by harmony of combination and arrangement, to produce unity of effect; in fewer words, variety in unity.

It would free an artist from the pedantry—from the trammels of the technical, to acquire some knowledge of the arts which thus claim kindred with his own; and where there is original power, the mind, instead of being oppressed by its increase of attainments, will discover, or discern, more clearly, the common bearings and hidden analogies of the different branches of art, which will thus shed light upon each other. An architect for instance, would be a better architect from knowing someting of painting and sculpture,—while the painter and sculptor would find their advantage in an acquaintance with architecture—the principles of the three arts being the same, only differently applied. The architect need not be able to paint a picture or model a bust,—nor the sculptor or painter to design a mansion: but each should understand the great principles of the sister arts, and know how, or in what way, they are identical with those of his own, and be able to trace the analogy and relations of the various productions of genius. He does not thoroughly understand the principles of his own art, unless he sees their universal application. A study of the laws of art, generally, would not enable the same man to write an epic, compose an overture, and design a palace, but it would be attended with advantages sufficiently important in reference to the art to which he was devoted. It would lead him to see at

a glance to which of the arts any given subject was best fitted, and prevent a painter taking one that was more suited, or perhaps only suited to a poem; or a sculptor attempting to illustrate, by his chisel, one that required the superior resources of painting to express. Many failures have had their source in ignorance or inattention on this head. There are necessary limitations to each of the arts: their scope is various. Painting is more confined than poetry, and sculpture than either. Of the five several arts, poetry is the most excellent—the most comprehensive: the poet has the longest line, the widest range. Ideas can be expressed in poetry, that cannot be adequately expressed otherwise,—by any other of the arts. S. H.

NOTICES OF NEW OR RARE PLANTS.

I. Fortune's Cape Jasmine.—(*Gardenia Florida*, var. *Fortuniana.*)—Very few green-house plants, introduced within the last five years, will bear comparison with this superb new Gardenia, brought from China by Mr. Fortune. In the first place, the plant is one of the finest green-house shrubs, with noble broad leaves, each four to six inches long. In the second place, the flowers, which are very large—of the size of the largest Camellia, resemble those of the double White Camellia, both in form and purity of color; and in the last place, they are deliciously fragrant. We notice that Messrs. Parsons & Co., of Flushing, advertise this unrivaled Gardenia for sale this autumn.

II. Large Red Escallonia.—(*Escallonia macrantha.*)—One of the most ornamental evergreen shrubs, a native of Chiloe—hardy about Baltimore, and likely to prove a most valuable "bedding-out" plant for the flower garden farther north. The flowers are borne in terminal panicles, are large and showy, and of a deep crimson red color. It blooms from June to October, most abundantly. The leaves are elliptical, and doubly serrated. "No garden where ornamental plants are esteemed"—says the periodical just quoted, "ought to be without this Escallonia. In Devonshire it is hardy. In a cold conservatory it would form a splendid bush, and moderate sized plants, grown in pots, would be very useful for purposes of decoration. It may be multiplied to any extent by cuttings of the young shoots, planted under hand glasses, in sandy soil; the young plants requiring the protection of a frame in winter."

III. The Slender Deutzia.—(*Deutzia Gracalis.*)—Those of our readers already in possession of that charming hardy shrub, the *Deutzia Scabra*, will welcome with pleasure a new, equally beautiful, and more *airy* species—with long white flowers, borne in slender panicles. This species, very lately introduced from Japan, grows about three feet high, with a slightly pendant habit in the branches—the leaves only about an inch long—the flowers a delicate paper white—blooming in May. It grows readily from cuttings, and delights in a rich light loam.

IV. The Double Flowering Horse Chestnut.—(*Aesculus Hippo. fl. pleno.*)—We do not know whether this rare and beautiful lawn tree may yet be had in this country, but it is grown for sale by Mr. Thomas Rivers, nurseryman, Sawbridgeworth Herts, England, who deals largely with America. The tree grows to a large size, and is much like the common horse chestnut, but when in bloom it presents a far more beautiful appearance, the flowers being so double as to resemble a good deal those of the double pink Hyacinth. The tree flowers when quite young, and is readily propagated by grafting on the common species. We copy the engraving from the Gard. Mag. of Botany.

THE DOUBLE FLOWERING HORSE CHESTNUT.

A CHEAP PIT FOR GREEN-HOUSE PLANTS.

BY AN ORIGINAL SUBSCRIBER, NEW-YORK.

DEAR SIR—I take it for granted that there are a good many among your readers, who, like myself, love gardens, and are too poor to have all the luxuries that belong to them. Among these luxuries I count green-houses and hot-houses. Now, as I dont spend fifty dollars a year on my garden, besides my own labor, it is not to be supposed that I have any such "Crystal palaces." Yet I contrive by the aid of cheap pits or frames, sunk in a dry warm part of my garden—under the south side of a board fence, to keep through the winter all the half-hardy plants, such as tea-roses, carnations, petunias, heliotropes, and most of the hard-wooded green-house plants that adorn the garden, and keep it gay in summer. Chinese Azaleas do even better in these pots, than they do in green-houses. To make such frames, it is only needful to choose a piece of ground that is well drained, to have a few good hot-bed sashes, to make a frame or bottomless box, out of some rough boards, as wide as the sashes are long, and as long as the sum total of feet that your sashes will cover if laid side by side. Sink the frame in the ground to its level, within two inches at the front, and three inches at the back, so as to make the needful slope to carry off the rain. Dig out the soil for two feet deep. Spread a couple of inches of small stones, or coal ashes at the bottom, and set the pots upon this. Give as much light and air as you can until severe frosty weather sets in. In downright winter weather keep the frames shut pretty close, covering the glass at night with several thicknesses of matting or old canvas bagging—and in very hard frost, with a few bundles of straw in addition. Water only when the pots appear somewhat dry—but then water freely—especially if the weather is such that you can keep the frame open for an hour or more.

In this way, almost all the popular and showy green-house plants may, as I have said, be wintered in excellent condition, at very trifling expense, no artificial heat, whatever, being required. Wishing, however, last winter, to do something new, and have a few really tender exotics in a pit, I hit upon a cheap and simple sort of warming apparatus, which succeeded quite to my satisfaction, and I must therefore describe it to you.

My heating apparatus was a large flat, tin lamp, with a common candle wick—the lamp large enough to hold a pint of alcohol—for this was to be my fuel. Over this lamp, at the distance of an inch and a half, was suspended or fixed my boiler—about six by eight inches, also tin. Out of the side of this boiler, about one-third of the way down, started a tin pipe, one inch in diameter, tightly soldered to the boiler, and also at every joint. This pipe ran quite round the frame, (suspended a little way from the board by a wooden bracket,) and finally entered the boiler again near the bottom, on the side opposite where it went out. The boiler itself was soldered quite tight, and the whole pipe was quite tight—with the exception of one place; this was the first elbow after it left the boiler—one-third of the way round. Here it had an upright joint soldered on, reaching up to near the glass—say two inches higher than the level of the water in the boiler. This upright joint was open at the top, and into this opening I daily poured the water to fill the boiler, pipe and all—for you see it was in fact all one boiler. I had then, as your readers well versed in hot-water heating, will see at a glance, a modern hot-water apparatus—on a miniature scale, at a very low price, such as can be made in a few hours by any tinman. Six pence worth of alcohol would carry my hot-water apparatus through the coldest night,

and warm the frame admirably, without any danger of over-heating, and in ordinary nights, (the frame being well covered,) I needed no fire. Soon after the lamp was lighted, the warm water began to rise in the boiler, and to flow off through the topmost pipe, and as it became cooled it returned to the bottom of the boiler, by the lower part of the same pipe—and although, of course, the water never became hot, it was quite warm enough, not only to raise the temperature of the frame, but to keep it raised—as the water once heated remained so a long time after the lamp went out.

I ought to add, that at the end of the frame, where the lamp was fixed, I had a little box, or double door, by which I could light and feed the lamp without letting cold air into the frame.

I have sent you this account of my simple experiments, which will appear insignificant enough to many of your readers, thinking that some few of those to whom "necessity is the mother of invention," might find a useful hint for their own practice.

Yours truly, AN ORIGINAL SUBSCRIBER.

New-York, September, 1851.

DESIGN FOR A PUBLIC SCHOOL.

[SEE FRONTISPIECE.]

IN accordance with our wishes, to see an improvement in the architecture of our school-houses, as expressed in previous numbers of this Journal, we present this month a design by Mr. CAVELER, an English architect, which will be found to present some points worthy of study, in the composition of this class of buildings.

The style is what may be called domestic Gothic, and in picturesque effect is only calculated to harmonise with rural scenery. It is to be built of brick, with stone dressings —a very substantial and excellent mode—and one which, in many parts of this country, would be comparatively economical.

The plan of this school-house embraces a double-school accommodation—one for boys, and another for girls. The total number of pupils provided for is four hundred. Each school-room has a class-room, a lobby for cloaks and hats attached to it, and a separate yard for play ground, in the rear.

Buildings for public instruction, if thus designed in a style calculated to awaken ideas of beauty, fitness and order in the minds of youth, would always help to educate the eye and the feelings in architecture, while like every other mark of civilization and refinement, they would insensibly elevate the character of all who are brought in contact with them. A boy may learn arithmetic as well in a log hut as in the most admirably proportioned building; but in the latter he will also be much more likely to learn something of the power of the nobler forms of mere matter, and their superiority over low and vulgar forms.

ON THE LIMITED DURATION OF VARIETIES OF PLANTS.

BY JOHN TOWNLEY, MOUNDVILLE, WIS.

A. J. Downing, Esq.—Dear Sir: I accede with pleasure to the request of your correspondent, Mr. Marshall, to state what grounds I have for subscribing to the theory advanced by Andrew Knight, respecting the limited duration of varieties of plants.

Before I proceed, however, I wish to set Mr. Marshall right on one or two points; he says that I condemn propagation by extension in comparison with seedlings; if what I have said should convey that meaning to your readers generally, some apology is due from me for the imperfect manner in which I must have expressed myself, for I certainly do not condemn propagation by extension; on the contrary, I consider that when once a valuable variety of apple, &c., is obtained from seed, that multiplying it by divisions of the stem is a perfectly legitimate mode of propagation, and one that should be practiced so long as the individual variety retains its health and vigor; but beyond that period—when a variety exhibits manifest symptoms of declining vigor, and has become diseased and unproductive, through age, then I consider it should no longer be propagated by division, nor should seeds be saved from it with a view to raise new varieties, seeing that it is probable that the health of the seedling plants would be influenced to some extent by the unhealthy and degenerate condition of the parent tree.

I may further remark that I am not prepared to prove "that trees and plants propagated by extension, do produce degenerate fruit from that very cause, and that alone." I am not aware of having said anything in the paper referred to, which will justify the conclusion that I entertain any such notions. In the matter of the potato, I stated what I believe to be the exciting and chief predisposing causes of the blight; I consider the potato to be in a condition different from that of any other cultivated plant; that considered in the mass, or as a species, it is hereditarily diseased; believing this, and knowing that it had been observed in the case of the pear, that seedlings raised from old, nearly worn out varieties, proved, as might reasonably have been expected, unhealthy, and liable to disease also; and knowing, moreover, that many varieties of potatoes recently obtained from seed, were subject to dry rot, and as much injured by the blight, as older varieties, I concluded that the best way to get rid of the hereditary taint, was to persevere in raising a succession of seedlings, with improved culture, selecting the strongest and healthiest plants each year, to be the parents of a fresh generation of seedlings in the year following. If seeds were saved from a healthy variety of fruit tree, or other plant, when in the prime of its existence, although the plant it was saved from had been propagated by extension, I know of no reason why the progeny should not be perfectly healthy. Nor is there any reason for believing otherwise, than that a species of plant whose varieties are propagated by extension, may not be continued equally healthy and vigorous forever, providing the successive generations of seedling varieties were always raised from seeds taken from plants when in a healthy and vigorous condition.

Now for my "hobby." Perhaps it may be well at the outset to state briefly the nature of the hypothesis we are about to consider. It is this. Vegetable life, like animal life, has its fixed periods of duration. A seedling apple tree, for instance, has its periods of youth, maturity, and old age. All cuttings taken from this seedling apple tree and grafted, are but the extension of an individual plant—one distinct variety, and the plants so propagated possessing the same constitution, properties and tendencies, and are not a re-

newal or reproduction, as by seed. They will all exhibit, (if we may so speak,) a sympathetic state of health, making, of course, due allowance for the action of adventitious circumstances; and although some plants, if placed in unusually favorable circumstances, may out-live the parent tree, yet there will come a time "beyond which the debility incident to old age, cannot be stimulated;" all plants of the variety will consequently become diseased and worthless.

A knowledge of this hypothesis is of importance to all cultivators, because if it is well founded, it shows to us the hopelessness of striving against nature, by persevering in the cultivation of varieties of plants when they have become aged and unhealthy, and no longer able to make an adequate return for the labor and attention bestowed on them. It shows also, the necessity of keeping up a succession of varieties from seed, and that it is an important matter to consider the age and health of a variety, when our object is to obtain from seed, new, improved, and healthy varieties.

In order that Mr. KNIGHT's hypothesis may be better understood, generally, and that I may be better able to prove what substantial grounds it rests upon, I have thought it advisable to direct attention to the most recent and elaborate attack on it—viz: two articles of Prof. LINDLEY, in the Gardeners' Chronicle of December 13 and 20, 1845; for the value of a theory is made manifest not only by the accuracy of the facts on which it is based, or the soundness of the reasoning by which it is supported, but by the fallacy of the arguments by which it is assailed, more especially if the assailant is a man of acknowledged ability, and acquainted with the subjects on which he writes.

The opinion of systematic botanists generally, on horticultural matters,—I mean men whose lives have been chiefly devoted to the classification and description of plants, does not seem, so far as my experience extends, to be entitled to any very great weight. LINDLEY, however, is an exception—the son and brother of a nurseryman, Vice-Secretary of the Horticultural Society of London, and Editor of the Gardeners' Chronicle, he has enjoyed opportunities of obtaining a more thorough knowledge of the details of practice, and the history of cultivated plants, than any other man now living who possesses anything like the same amount of theoretical knowledge; and when, with these advantages, we consider that he wields the pen of a ready and plausible writer, it may be presumed that if any man were capable, by means of facts at present known, of proving that Mr. KNIGHT's views on this point are erroneous, LINDLEY would assuredly be that man.

Possibly there may be readers of the Horticulturist not much acquainted with Mr. KNIGHT's labors, and who may not, therefore, be able to appreciate the deference which is due to him as a patient, ingenious, and truth seeking inquirer. No one can better testify to his great merits than Dr. LINDLEY. In a memoir of Mr. KNIGHT, published in the Atheneum, Dr. LINDLEY, when alluding to his celebrated paper on the inheritance of disease in fruit trees, and other communications laid before the Royal Society, said, "in all these researches the originality of the experiments was very remarkable, and the care with which the results were given, was so great, that the most captious of subsequent writers have admitted the accuracy of the facts produced by Mr. KNIGHT, however much they may have differed from him in the conclusions which they drew from them. No man living, now before the world, can be said to rank with him in that particular branch of science to which his life was devoted."

One of the first subjects to which Mr. KNIGHT's attention was directed, was the unhealthy condition of several old and famous varieties of the apple and pear; he was told by neighboring nurserymen that they could no longer raise healthy and profitable trees from them; that they were, in fact, worn out. Mr. KNIGHT was persuaded that this was

a vulgar error, and he commenced a series of experiments with the express view of proving it to be so. Instead, however, of holding an imaginary conversation with the old trees, after the fashion of your correspondent, Mr. MARSHALL, he allowed them to speak for themselves; he questioned and cross-questioned them, with an ingenuity and perseverance as trees were never questioned before, in the vain hope to shake their testimony and non-suit the nurserymen; but they told him plainly, repeatedly, and decisively, in a language not to be misunderstood, that their doom was sealed; that the vigor of youth, and the productiveness of mature age, had passed away; that they were no longer able to sustain their former labors, and nothing but increasing infirmities remained for them.

An account of his experiments in this matter, was the subject of his first communication to the Royal Society, in 1795, and in a communication to the Horticultural Society, in 1824, when his views had been subjected to much criticism and no small amount of ridicule, he stated that, "every experiment which seemed to afford the slightest prospect of success, was tried by himself and others, to propagate the old varieties of apple and pear, which formerly constituted the orchards of Herefordshire, without a single healthy or efficient tree having been obtained;" and what ANDREW KNIGHT, and other practical men, found by repeated experiments to be impracticable, no man, that I am aware of, has yet proved by experiments in the climate of England, to be feasible; and that, I apprehend, is an important fact which should not be altogether lost sight of in this inquiry.

"Of the apples mentioned and described by PARKINSON," Mr. KNIGHT says, "the names only remain; but many of EVELYN'S are still well known, particularly the Redstreak; we had many trees of it, but they appear to have been in a state of decay during the last forty years; others mentioned by him are in a much better state of vegetation, but they have all ceased to deserve the attention of the planter." Dr. LINDLEY does not attempt to deny these facts, but offers what we may presume he considers to be a more satisfactory explanation. Besides the main point at issue, three foolish propositions are gravely examined in these anticles, and as a matter of course, are very cleverly proved to be untenable. They are these: 1. It is alleged that seeds renew the languid vigor of a species as often as they are sown, and that if an unhealthy plant is multiplied by seeds, the immediate offspring becomes healthy. 2. It is also said that multiplication by seed is the only natural mode of propagation known among plants. 3. Seeds are said in all instances to produce healthy plants, but this, as LINDLEY truly observes, "like the previous assertions, will not bear exact investigation." As, besides Mr. KNIGHT, no other writer is referred to but myself, in these articles, I may, in case any readers of the Horticulturist should have access to the Gardeners' Chronicle, be allowed in self-defence to say, that these propositions did not emanate from me.

Dr. LINDLEY, in attempting to disprove the soundness of Mr. KNIGHT'S views, goes at once to the root of the matter, by boldly denying that vegetable, like animal life, has its fixed periods of duration: he says, "trees, and other wild perennial plants, have never yet been shown by any trustworthy evidence to be subject to decripitude arising from old age. On the contrary, every new animal growth is a renewal of their vitality. In the absence of disturbing causes from without, there is no intelligible reason why a forest tree should not continue to grow to eternity." If there be, indeed, no trustworthy evidence on record showing that trees become decrepid through age, the only conclusion that I should feel justified in arriving at, would be, that trustworthy authors must have considered it would be idle and superfluous to insist upon a fact which would seem to be so self-evident to every one who had ever enjoyed a woodland ramble. And as to every annual growth being a renewal of the vitality of trees, it is an annual transition from pas-

sive to active vitality, but it cannot be said to be a *renewal* of vitality, any more than the awakening of a dor-mouse, or other hybernating animal, can be said to be a renewal of its vitality. It is the same vitality throughout life, only differing in power as the measure of life progresses, and maintaining its ascendency for a longer or shorted period, according to the original vigor of the constitution, and to the favorable or adverse circumstances to which individuals may have been exposed. The periods of youth, maturity, and old age, are, indeed, sufficiently well marked in fruit and forest trees, and the changes induced by age have been observed and described by KNIGHT, LOUDON, and other writers, and may be briefly summed up. We find a tree in its youth grows with rapidity, exulting as it were, in its vigor and health; as it reaches maturity the exuberance of its growth is checked, and its energies are chiefly directed to the production of fruit or seed; as old age advances, the foliage is first seen to become meagre, blossoms are more seldom followed by fruit; the production of a moderate crop of fruit is followed by great exhaustion, from which the tree slowly recovers; the young shoots become more feeble and shorter; next, the extremities of the branches begin to decay; the fruit is now irregularly ripened, and of inferior quality; mosses, lichens and canker seize upon the wood; parasites infest the leaves; insects lend a helping hand in the work of destruction; birds hasten the work by searching and digging for the insects; water and air are thus introduced; thus all these various causes combine to reduce the aged tree to its kindred dust. All this may be admitted as true, yet it is contended that the decay and death of a tree are not a consequence of age, or diminution of vital power, but arise from external, not intrinsic causes. "The soil," LINDLEY says, "becomes exhausted, the roots wander into uncongenial soil, food is withheld, and the elements conspire against the doomed tree." Now, there are many trees and shrubs which propagate themselves considerably by means of suckers. "The Aspen," Mr. KNIGHT observes,* "is seldom seen without a thousand suckers arising from its roots; yet this tree is thinly, though universally, scattered over the woodlands of England." I can speak from experience, he adds, "that the luxuriance and excessive disposition to extend itself, in another plant, (the raspberry,) decline in twenty years from the seed." If the diminution of vigor which precedes decay was owing to external, and not to intrinsic causes, mainly, then the raspberry should go on and on, extending its circle each year, like the fungi of a fairy ring, never resting while there was any fresh soil to occupy, and the last plants should be as vigorous as the first; for surely it cannot be said that the diminution of the vigor of a plant which extends itself in this manner, can be owing to the external causes above mentioned.

In the same soil a gooseberry bush may live fifty years, an apple tree two hundred, a pear four hundred, and an oak one thousand. If external influences alone determine the existence of a tree, why this difference? Why does not the hardy gooseberry, growing under the same circumstances, live as long as the oak? It is because the influence which chiefly determines the existence of different species, is inherent, and not dependent solely upon external circumstances. And if it is the inherent vitality or constitutional power, which limits the duration of an individual tree, then, obviously, all cuttings taken from that tree inherit the same constitutional power and tendencies; and the healthy existence of the plants raised from the cuttings, must be nearly co-equal with that of the original tree, providing it died from the infirmities of age. The truth is, the same law prevails in the vegetable as in the animal kingdom. For wise purposes, different periods of existence are assigned to different species of plants, as well as to different species of animals; but it is obviously a law of nature, that none shall live forever. Some species of animals run

* Knight's Phys. and Hort. Papers, p. 84.

their course in a few hours or days, the life of others extends beyond a century, but the end of all is death. So of plants: some spring into existence, fructify and die within a week; the life of others is limited to five or six months; and so the period of existence gradually extends until we come to the monarchs of the forest, which may boast of a life of one thousand years and upwards. But because they have lived so long, are we then to conclude that there is no limit to their existence, that they form an exception to all other organic beings, and that they can never suffer decay through the infirmities of age? Most assuredly not. A more unwise or inconsistent supposition never entered into the mind of man. The lordly oak labors under the same irrevocable decree as the humble weed,—dust they are, and unto dust they must return.

As a set off to KNIGHT'S experiments on the apple and pear, some instances are cited by Dr. LINDLEY, of cultivated plants having been propagated by division a considerable time, without wearing out. The white buttery pears of France are said to have been propagated by division, from time immemorial, and exhibit no trace of debility. I am not acquainted with the history of the white buttery pears of France, and cannot, therefore, say what value is due to this statement. I may observe, however, that it is anything but satisfactory or conclusive evidence. French writers might with equal truth say that white heart cherries, or pink-eyed potatoes, had been cultivated in England from time immemorial. There are, and have been, however, many varieties of these plants known by these names; and as the duration of the pear is supposed to be somewhere about four hundred years, possibly this period, even supposing one variety only has been known to French writers under that name, is amply sufficient to constitute a "time immemorial." My desire, however, is to arrive at the truth, and if your knowledge of fruits, Mr. Editor, will enable you to confirm the accuracy of Lindley's statement, let him have the benefit of your knowledge.

Dr. LINDLEY further remarks, that "some vines which are *supposed* to have been in existence, in the days of COLUMELLA, have been transmitted by division to the present day." The fact that varieties of the vine had been propagated by cuttings a considerable time, was the chief reason advanced many years ago by LOUDON, to prove that Mr. KNIGHT'S views were erroneous, and when I considered the spirit in which the objections seemed to have been penned, and the extent of LOUDON'S knowledge of garden history, it tended in no small degree, to convince me that truth was on the side of Mr. KNIGHT; for even supposing the conjecture is true, that some vines of the present day are the same varieties mentioned by COLUMELLA, surely an impartial inquirer after truth, must be ready to confess that this seemingly formidable objection is, in reality, no objection whatever, seeing that the vine is one of the longest lived plants known; nay, so long will individual plants of the vine live, that LOUDON says, "the age which the vine will attain in warm climates, is so great as not to be known; it is supposed to equal or surpass the oak." If this be so, then there is obviously nothing improbable in the supposition that a plant of the vine living in the days of COLUMELLA might, if not destroyed by violence be living now; it is, therefore, perfectly consistent with Mr. KNIGHT'S hypothesis, that varieties of the vine mentioned by COLUMELLA, may have been continued by division to the present day. And yet because varieties of this long lived plant have been propagated by cuttings during centuries, we are required to believe that varieties of the potato, and other short-lived plants, propagated in like manner, do not wear out and become feeble in consequence of age, but that with due care, they may be made to live forever!* JOHN TOWNLEY.

* To be countinued.

A NEW VARIETY OF PORTULACCA.

BY PROF. CHARLES G. PAGE, WASHINGTON, D. C.,

DEAR SIR—The varieties now cultivated of the Portulacca splendens, are four in number, viz: the *crimson*, the *scarlet*, the *white*, and the *yellow*. The white is subject to the freak, not uncommon in florist's flowers, of bearing different colored flowers upon the same stalk. Sometimes every flower will be a pure white, and occasionally two petals crimson, and two white; occasionally a dash of crimson in one or more petals, and so on. I have even seen a pure *crimson* flower, on the white variety. But the yellow has, for the three seasons I have raised it, been pertinaciously yellow, although I have made many attempts to cross it with the crimson and scarlet. I have at last succeeded in obtaining a new and exceedingly beautiful variety between the crimson and yellow, and what is quite interesting, it has occasionally a pure crimson flower upon the same stalk. It has not yet borne a pure yellow, though by analogy it should. Thus far, the mixed flowers have the yellow and crimson nearly equally distributed, the crimson generally predominating a little. Two petals are generally crimson, and two yellow, slightly spotted or dashed with crimson. The different colored petals are sometimes opposite and sometimes in pairs.

C. G. P.

Washington, Sept. 1, 1851.

Foreign and Miscellaneous Notices.

INFLUENCE OF GYPSUM ON VEGETATION. By M. C. MENE.—Ever since Franklin's great experiment, gypsum or sulphate of lime has generally been considered as possessing much fertilising power, and of being of great importance in agriculture. Having paid some attention to this substance, I make known my results, in the hope that they may be found of value to the public.

1. I filled two zinc boxes with pure sulphate of lime obtained from the double decomposition of sulphate of soda and chloride of calcium; in one of these boxes I sowed some grass seeds, in the other some wheat. The two boxes were then placed under glass shades, in order that all external influences might be avoided: the seeds were watered every other day. At the end of a few weeks plants had come up green and healthy, as in common soil; but as they developed, their fine appearance diminished, and at the end of a fortnight they looked dried and withered.

2. In boxes similar to the first, I placed a mixture of equal quantities of pure sulphate of lime, obtained as before, and clay, and sowed the same seeds as in the last experiment; the plants came up, but not nearly so well as in an unartificial soil, and they did not ripen.

3. In boxes, and under circumstances the same as before, I sowed the same seeds on dung covered over with a layer of sulphate of lime three-tenths of an inch deep. At the end of a fortnight the plants had come up and grown wonderfully; they ripened well and were magnificent specimens.

These facts, though of considerable practical importance, would not have shown in what way sulphate of lime really acts, had it not been for the following accident:

Happening to have a glass of muriatic acid in my hand one day, when looking at box No. 3, I accidentally spilled some of the acid on one of the boxes, and to my great surprise the lime effervesced, and on further examination I was satisfied that the sulphate had become changed into carbonate of lime. I concluded from this fact that the carbonate of ammonia, given off by the decomposition of the dung, being volatalised by the heat of the sun, came in contact with the sulphate of lime, when double decomposition ensued.

To ascertain how far this was true, I got some zinc pots, with bottoms pierced like a sieve; in the pots I placed some dung, then some sulphate of lime, and then I sowed some grass seeds.

When the plants had appeared and become tolerably developed, I watered them abundantly for a quarter of an hour, and in

the liquid which flowed from the bottom of the pots I found sulphate of ammonia, whilst on the surface of the pots there was evidently carbonate of lime. This confirmed the view I had adopted.

I then made other experiments, which do not, however, bear upon the last mentioned facts. For example, I watered grass seeds sown in manure, in pots with pierced bottoms, with water containing one of the following substances, viz: sulphuric acid, muriatic acid, nitric acid, acetic acid, sulphate of iron, sulphate of potash, chloride of manganese, phosphate of soda, sulphate of magnesia, nitrate of soda.

With all these substances the grass grew well, and from the bottoms of the pots I obtained salts of ammonia, which are not volatile at the ordinary temperature. From all these facts I think we may conclude—

1. That gypsum has by itself no fertilising power, and is alone useless as a manure.

2. That gypsum only is useful in agriculture when mixed with substances containing ammonia; in which case there is a double decomposition, and the ammonia is stored up for the use of the plants.

3. That for gypsum may be substituted any other salt which will fix ammonia, and render it not volatile at the ordinary temperature.

It is my intention next year to repeat these experiments on a large scale, in order to ascertain their real practical value.—*Comptes Rendus.*

Method of Preserving young Fruit Trees from the attacks of Hares and Rabbits.—All lovers of gardens know by experience that hares and rabbits devour with great avidity the annual bark of young fruit trees, and particularly of dwarf apple trees, among which the most healthy and vigorous are always destroyed the first, in consequence of their bark being the most tender and savoury. As soon as the ground is covered with snow, these animals, no longer finding anything in the fields on which they can browse, begin their devastations in the gardens: if they are numerous, and the fall of snow heavy, a few nights only are sufficient for them completely to ruin the most beautiful plantation, and to annihilate the result of many years of labor and care. Happily, nothing is more easy than to place these trees beyond the attacks of these marauders protected by the law. The following is the plan I have adopted with complete success during the last six or seven years. I mix about 4½ pounds of quick-lime, in lumps, with 2½ gallons of water, and add a few handfuls of soot, stirring the liquid until the two substances are intimately incorporated. I then take a handful of Rye-straw and bind it on a stick to form a kind of brush, with which I grey-wash the trunk and branches of my trees from the ground to at least a yard above it; for should the snow drift by the wind against the foot of the trees, the hares, by means of the inclined plane thus afforded them, would be able to attack the trees at a much greater height. The wash, applied hot, has also the advantage of preserving the bark of the trees in a state of perfect health, and preventing the increase of moss, which is often pernicious in its effect, and always very disagreeable to the eye. It is desirable that this preservative application should be made in dry weather, in order that the mixture on drying may adhere to the bark; for should it rain at the time, or immediately afterwards, the mixture would be washed from the trees, and it would be necessary to re-commence the operation. If the mixture also is applied during a frost, there would be little chance of perfect success; as the part of the bark on which it would be laid would be thawed. If, however, through want of foresight, a frost sets in during the course of the operation, and it becomes urgent to complete it, we may do so with perfect success by choosing that moment of the day in which the sun strikes most strongly with his rays the trees on which we wish to operate. Three gallons of this wash are sufficient to secure two or three hundred dwarf trees from the ravages of hares; a result that may be obtained for a pennyworth of lime and the day's work of an active laborer. This plan is equally infallible for the preservation of grafts and all nursery collections. *From the French of the Baron Vander-Straeten (in the Journal Agricole de Verviers.)*

The Glycine Sinensis—where it is found wild.—Before the last war with China, foreigners were confined to narrow limits about Canton and Macao, where they had no means of knowing anything of the more hardy plants of the north, which they sometimes met with in gardens, and introduced to Europe. Now, however, we can prosecute our botanical reseaches in a country which is nearly a thousand miles further to the north-east, and at many other places which lie along that line of coast. The island of Koolung-su, for example, near Amoy, was taken by our troops during the war, and occupied by them for some years, according to treaty,

until a portion of the ransom money was paid. It seemed to have been a place of residence to many of the mandarins and principal merchants in peaceful times, and boasted of its gardens and pretty fish ponds. When I first saw these gardens they were mostly in a ruinous condition, and everywhere exhibited the fatal effects of war. Many beautiful plants, however, still continued to grow and scramble over the walls. Captain Hall, of the Madras army, who was stationed there for some time, was very fond of botany, and took great pleasure in pointing out to me all the plants which he met with in his rambles. "I have good news for you," said he, one morning when I met him; "come with me and I shall show you the most beautiful plant on the island, which I have just discovered. It is a creeper, it produces fine long racemes of lilac flowers before it puts forth its leaves, and it is deliciously fragrant." What could it be? was it new? would it produce perfect seeds? or could young plants be procured to send home? were questions which rapidly suggested themselves. It is only the enthusiastical botanical collector who can form an idea of the amount of excitement and pleasure there is when one fancies he is on the eve of finding a new and beautiful flower. Captain Hall led the way, and we soon reached the spot where the plant grew. There had been no exaggeration in his description; there it was, covering an old wall, and scrambling up the branches of the adjoining trees; it bore long racemes of Pea-shaped flowers, and scented the surrounding air with its odors. Need I say it was the beautiful Glycine. But it was not found in a wild state even at Amoy, and had evidently been brought from more northern latitudes.

When I reached Chusan, in latitude 30° north, I found a remarkable change in the appearance of the vegetation. Tropical forms had entirely disappeared, or were rarely met with. Although the summers were as warm, or even warmer, than they were in the south, yet the winters were nearly as cold as those we have in England. On this ground, and all over the provinces of Chekiang and Kiangnan, the Glycine seemed to be at home. It grew wild on every hill-side, scrambling about in the hedges by the footpaths, and hanging over and dipping its leaves and flowers into the canals and mountain streams.

But by far the most beautiful effect is produced when it attaches itself to the stems and branches of other trees. This is not unfrequent in nature, and is often copied by the Chinese and introduced into their gardens.

You can scarcely imagine anything more gorgeous or beautiful than a large plant of this kind in full bloom. Its main and larger branches are entwined round every branch and branchlet of the tree; and from them hundreds of small ones hang down until they nearly touch the ground. The whole of the branches are covered with flower-buds, which a day or two of warm weather brings rapidly forward into bloom. To form an idea of the effect produced by these thousands of long lilac racemes, you must imagine, if you can, a floral cascade, or a Weeping Willow covered with the flowers of the Glycine. There are some large specimens of this kind on the island of Chusan. One, in particular, was most striking. Not content with monopolising one tree, it had scrambled over a whole clump, and formed a pretty arbor underneath. When I saw it last, it was in full flower, and had a most charming appearance.

The Chinese are fond of growing the Glycine on trellis-work, and forming long covered walks in the garden, or arbors and porticos in front of their doors. In a former letter I noticed a large specimen of this description in the garden of the British consulate at Shanghae. There is another remarkable one in the garden of a mandarin at Ningpo; growing in company with it is the fine new variety introduced lately by the Horticultural Society of London, and published in the Journal of the Society. In foliage and general habit the two kinds are nearly alike, but the new one bears long racemes of pure white flowers. The kind old gentleman to whom the garden belonged (he is dead now) allowed me to make layers of this plant on the top of his house, and during the summer months, when I was travelling in other districts, attended to them and watered them with his own hands. When I saw him about a year ago he told me he was then nearly 80 years old. One of the gentlemen who accompanied me (Dr. Kirk, of Shanghae,) being introduced to him as a medical man, was asked if he could live for one year more. The old man said he knew he must die soon, but he was most anxious to live for another year. His presentiment was but too correct, for the next time I visited Ningpo, about six months after, I found the door of the mansion bricked up, and the garden neglected and overrun with weeds.—*Gardeners' Chronicle.*

Domestic Notices.

Pears Running Out.—Any person conversant with fruit, who will take the trouble to walk through the markets of Philadelphia—where more Seckel Pears are to be seen than any where else in the world, cannot but be struck with the very small size of these pears. If he has besides, been in the habit, as we have been, of seeing the Philadelphia markets at this season, for some years past, he will make the comparison between the Seckel Pears of Philadelphia now, and those of ten or fifteen years ago. Then, the Seckel Pears might be seen by the waggon load, large, fair, ruddy and handsome, as well as delicious. If you mention this present degeneracy to a Philadelphian, he will shrug his shoulders, and say, "yes, the Seckel Pear is no longer what it once was; I am afraid it is running out."

And yet, if you go to Boston—which is far from being so favorable a climate for fruit culture, as that of Philadelphia, you will see Seckel Pears so large and fine that you almost doubt their being the same fruit. If you are curious to investigate the history of the Seckel Pear culture in the two places, you will not long be at a loss how to account for the difference. In Philadelphia they trust to nature, and a soil once highly fertile. But the Seckel pear trees have exhausted the soil—because it had only a certain amount of pear tree elements, and languished for more food. In Boston they know that nature is a hard mother, and they rely on art—trenching the soil twice as deep as nature makes it, and supplying an abundance of food for the growth of the tree and fruit. Hence the average size of the Seckel Pear in Philadelphia, has dwindled down in twenty years, from an inch and three-fourths in diameter, to a little more than an inch—while in Boston, it has been raised by high culture, to between two and three inches in diameter.

Some soils, however, contain in themselves an almost inexhaustible supply of natural food for fruit trees. Even long culture wears out such soils slowly—because the mineral elements of fertility gradually decompose, and form new soil. We have before us a couple of Seckel Pears, of extraordinary size and beauty, sent us from Brandon, on the James River, Virginia, one of the largest and oldest estates in America—having been cultivated since the earliest settlement of the country. This estate still shows large fields, which, under the present good management—(i. e. the judicious application of lime,) yield 30 bushels of wheat to the acre. But the Seckel pear trees here, without any special attention, still bear larger and finer fruit than we have seen in Philadelphia. It is useless, with such proofs of the effects of soil and culture upon fruit, for our Philadelphia friends to talk about the "running out" of so modern a pear as the Seckel. It is the soil which has run out, not the variety. ———

Guano.—Nothing is more pleasant than to give advice which, when applied to practice, affords satisfactory results. A year ago a friend complained of the high cost of stable manure. We recommended guano—which, at 2½ cts. per lb., cannot but be considered a cheap manure. "Ah, but," said he, "it does not suit either our climate or our soil." When do you apply it, we asked him. "In the months of April or May, when planting my crops, or working my garden borders." It is precisely on that account, we answered, that in your dry soil and our dry climate, you have failed to get good results. Now make another trial in the months of October or November. Apply guano to garden or orchard soils that want enriching, at the rate of 500 lbs. per acre. The soil should be *lightly* stirred afterwards, to bury the guano, and fix it.

He followed our advice—not only in his garden and orchard, but in his meadows. In the latter he sowed it broad-cast, like plaster, while in the garden he spread it over the ground while ridging it up for winter. This season he had better growth of vegetables and grass, and larger fruit, than for many years past, and he attributes it very justly to the action of guano applied in the autumn—when it has time to impart its fertilising properties to the soil, in which they become completely incorporated before the next season's growth commences.

Save The Dead Leaves.—Very few gardeners would be guilty of so foolish a thing as to waste barn-yard manure. But they are almost all guilty of a waste not a whit less excusable. We mean the waste of dead leaves that fall at this season of the year, from trees and shrubs of all kinds. If every horticulturist would reflect for a moment on the nature of these fallen leaves—which contain not only the vegetable matter, but the earthy salts, lime, potash, &c., needed for the next season's growth–and that too, exactly in the proportion required by the very tree or plant from which they fall—nay more, if they would consider that it is precisely in this way, by the decomposition of these very falling leaves, that nature enriches the soil, year after year, in her great forests, it would scarcely be possible for such a reflecting horticulturist to allow these leaves to be swept away by every wind that blows, and finally be lost altogether.

A wise horticulturist will diligently collect, from week to week, the leaves that fall under each tree, and by digging them under the soil about the roots, where they will decay and enrich that soil, provide in the cheapest manner, the best possible food for that tree. In certain vineyards in France, the vines are kept in the highest condition by simply burying at their roots every leaf and branch that is pruned off such vines, or that falls from them at the end of the season. In the same manner, the leaves that fall from young fruit trees should be carefully saved and dug-in beneath the surface of the soil. A single year's experience of its good results will confirm our readers in this practice.

Some Autumn Hints.—Dear Sir: I send you a few hints for the management of the garden in autumn, which may perhaps be useful to your readers.

1. Carnations.—A frame of boards—an old hot-bed frame covered with glass and a few boards, is all that is needful to keep Carnations through the winter. The plants should be taken up—the new layers I mean, and carefully potted in a mixture of old decomposed manure, sand and loam; the pots set on some coal ashes spread over the bottom of the bed. So long as the weather is warm and mild, give a good supply of water whenever the soil in the pots appears the least dry, and keep the frames open. When the frost sets in, water more sparingly—but give air as often as you can. During the winter, keep the glass covered with boards for a good part of the time—especially if the soil in the pots is frozen. The great point is to keep the plants perfectly dormant and quiet during the winter, and for this purpose you only open the bed to the sun when the weather is fine, and there is not a particle of frost in it—all the rest of the time you keep it shaded well with boards, admitting the air in at one end—or both ends. As spring opens, you gradually open the plants to the sun, and commence giving them more water. About the 10th of April you plant them out in the bed where they are to bloom. I ought to add to this simple practice, that the rats and mice are very fond of Carnations, and it will be wise to keep a little arsenic and meal on boards, at the bottom of the beds, that they may get their deserts.

2. Dahlias—Many lose their Dahlias from too much care in preserving the roots. The following is my mode, pursued with success for years. I take up the plants as soon as the frost has blackened the tops—

choosing a clear windy day for the purpose. I cut off the stalk an inch above the surface of the ground. After the roots are taken up, carry them to an airy loft or out-building, where they will be secure from frost for several days. Here allow them to stand quite separately, till the particles of soil that may adhere to them appear perfectly dry; better still if the the roots are turned over once, so as to become ripe and dry on all sides. Then take them into a dry cellar that will keep potatoes well, and lay them in a single tier on a floor, or on shelves, covering the roots lightly with *dry* tan.

3. Manuring Fruit Trees.—This is the season for the amateur to look over his fruit trees—especially those which have failed to produce good crops for want of nourishment in the soil. Carefully open a trench at the very ends of the roots—throw out a third of the poorest of the soil, and replace it with a mixture of manure and ashes. I use a cart load of barn-yard manure—no matter if it is fresh—to a bushel of ashes, and I find it never to fail in bringing up the tree. If I wait till spring before I apply this stimulus —I find it to do just half as much good as if I put it in the soil in October and November. It is quite surprising how old fruit trees can be brought to by this simple dressing—barn-yard manure and ashes, applied in the fall of the year. Some persons are too indolent to do it, but I think I can prove to them that it will "pay." On one side you have an enfeebled tree; it bears a peck of poor fruit, half of which is not fit to take to the table. It costs you nothing per annum—profit about equal to cost. On the other side you have the same tree—you give it two cart loads of manure—two bushels of leached ashes—once in three years, cost one dollar—and receive two bushels of fine fruit per annum, for three years,—value, three dollars a year, nine dollars—profit eight dollars! Very respectfully yours, A. T. *Chester Co., Pa., Sept.* 1851.

The Rot in Grapes—Dear Sir: As many cultivators of the native grapes suffer from the "rot"—a disease that makes its appearance by a small discolored spot on the berries, that frequently spreads till it destroys the whole bunch, and sometimes greatly injures the entire crop, I beg leave to say that this disease is capable of being kept under by careful hand-picking.

Having been more or less troubled by the the appearance of this disease in my vineyard for several summers past, I ventured to attempt to eradicate it by the following means. As soon as the rot season commenced—say the first of July, I employed a man to go carefully over the vines, and with a small pair of scissors, cut out every bunch that was in the least degree affected. These grapes were taken and buried in a lime heap —where I got them out of the way, and will I trust, turn them into compost. The man spent a morning every week in going over my vineyard of two acres, and the cost of his time so employed is exactly six dollars and fifty cents. *Per contra*—I have few or no bunches with the rot in my vineyard—on the other hand, I have an excellent crop of fine grapes—while my neighbors, who have only trusted to providence and the season, are much afflicted with the rot. If you think this experiment of any value, the foregoing is at your service. An Ohio Reader.

Dr. Comstock's Aquarium.—Dear Sir: In my description of Dr. Comstock's aquarium, I forgot to mention that the box should be placed *in the ground*, as it would otherwise burst by freezing, and be destroyed. The Doctor covers his in the fall with boards, to prevent injury by excess of water and frost. Yours, A. S. Monson. *New-Haven, Sept.* 12, 1851.

Fruit Culture in the United States. —Our cotemporary, Mr. Barry, of the Genesee Farmer, who has been spending the summer abroad, from whence he has written the best letters that have appeared in the agricultural journals, on the matters relating to the Exhibition, has given his read-

ers the following comparison of the horticultural advantages of both sides of the water. Looking at the matter in so far as relates to fruit and farm culture—we entirely agree with him—but for ornamental gardening, no climate equals England.

"In regard to fruit culture, our advantages are still greater. An orchard of fruit trees in this country, even when well attended, does not require as much care and labor in five years as it does in one in the greater portion of Europe. A single peach tree in England or France, receives more actual hard labor in one season, than an orchard of one hundred trees in Western New-York; and the price of a single fruit, or at any rate half a dozen, in the markets of London, or Paris, will buy a bushel in New-York or Rochester. We complain of curculio destroying our plums and apricots, and this is one of our greatest drawbacks here, but, notwithstanding, I have seen more plums and apricots on a single tree here since I returned, than on any dozen I saw in England. We have the aphis on our cherry trees here, but they are easily destroyed. In both France and England I saw both orchards and nurseries of cherry trees almost ruined by them, and they were said to be unconquerable. We have fire blight, and leaf blight here, and both are sad difficulties, but in France and England they are not without both these maladies. I saw apple trees very seriously affected in England, with what we designate fire blight,—the ends of the branches black and dead, and there, as here, the real cause is quite unknown to the most skillful cultivators. In France I saw as bad cases of our leaf blight on the pear, as I have ever seen in America. The ravages of birds in Eurore are tremendous. It is almost impossible to save a crop of cherries. Nets, scarecrows, and a thousand expensive and troublesome devices are practiced, that in this country, where labor is dear, would not be attempted, even though the culture should be abandoned.

"Fruit stealing has been supposed to be peculiarly an American vice, but it is not so by any means, though, probably, quite as prevalent as elsewhere. In other countries fruit gardens are better protected than in ours, and this gives them a greater degree of safety: but in France I saw several nurseries at some distance from houses, where the fruits were removed as soon as they appeared, to save the trees from being broken by the fruit stealers. If in America we were to apply ourselves to culture with the same indefatigable perseverance, the same regardlessness of labor that I have seen in Europe, we could produce results that we do not now dream of, and we will come to this by and bye—we are every year approaching it nearer and nearer—our culture is becoming more skillful, more thorough and more successful; but we have only made a beginning.

"In Horticulture, as in Agriculture, the United States of America has a great destiny to fulfil. Our territory is not only immense, but so diversified in soil and climate, that all the most valuable grains and fruits can be produced in such abundance as will enable us to supply other countries less favored in these respects. The intimate connection now established between all parts of the world, has removed the barriers which distance heretofore created, and we have now a clear course. Cultivators may redouble their energies with a sure prospect of reward, and if our government, in its wisdom, should see fit to lend a helping hand, all the better."

Osage Orange Hedges.—The Osage Orange is growing in favor as a hedge plant. Though the ends of the shoots are, in New England, liable to be nipped by the winter while the plant is young, it grows more hardy with age and clipping till it becomes quite acclimated. Wherever the peach ripens, the Osage Orange will make a good hedge. The following remarks from the Boston Cultivator are interesting in a practical sense:

Mr. Editor—In a late number of the Cultivator, one of your correspondents requests me to give my mode of cultivating the Osage Orange as a hedge. I commenced in April, 1848, with three pints of seed, sown in drills a foot distant from each other; hoeing and weeding them well. In the Spring of 1849, I planted 350 yards; dug the trench 18 inches deep, and where the land was poor, spread earth at the bottom that was collected from the wood pile, planted the sets at eight inches apart, and cut them off two inches above the ground. Each plant sent up from two to three shoots, which attained a height of five or six feet that season. The first summer I kept them free from weeds, and made the ground mellow by repeatedly hoeing and digging with the spade, and in the spring of 1850, I cut them down to one foot from the ground, cultivating as before. In July, I again cut them down to two feet, and in Sept. trimmed them again.

In the present year, 1851, they did not require any cultivation. July 10th, the hedge was from seven to eight feet high, when I trimmed and shortened to three feet six inches. The hedge is now 30 inches in width, and so thick that a small bird cannot fly through it, while the winter does not appear to affect it. I trimmed the 350 yards in three hours, and a boy put the bush in heaps in one hour, ready for burning. I have not discovered any enemies except the mole, and it has never appeared since the first spring. I have now 750 yards growing, all of which assumes a very healthy appearance.

Mr. Wilkinson's objections were, I believe, but not having the No. of the Cultivator at hand, I speak from memory, First: "The impoverishing of the land to 20 or 30 feet on each side of the hedge." Now I have not discovered any injury from mine as yet, and do not apprehend any more, than I should from the common thorn of the same height; but I was told by Mr. Solon Robinson, that "on the prairies of Illinois, where they grow without being trimmed, they impoverish the ground 10 feet on each side of the hedge;" and thorns will do the same if not kept trimmed. I keep my common thorn hedges down to four feet high, with a bank along-side, and the grain and grass is as good within a foot of the hedge, as it is elsewhere. Second objection, "that horses would not approach sufficiently near while ploughing, &c." This we consider their greatest merit; we do not desire hedges, that horses and cattle can at pleasure eat, trample upon, and destroy; we can plough within half the length of the single tree, say about two feet, and that is near enough to approach any hedge with the plough. Third objection, the expense in trimming; you can perceive by the above, that by taking the hedge in time, it is but a very easy day's work to trim the 750 yards; but as a matter of course, when the hedge becomes larger and older, it will require a longer time to perform the same work. I conclude by saying, I like the osage much better than the common thorn, and they form decidedly the cheapest fence that can be made, as those that were planted first in the spring of 1849, are now a good fence, and capable of turning horses and cattle, with the exception of a few that are planted under shade trees, where they are not quite so large and strong. BRYAN JACKSON. *Bloomfiled, Del.*

REGISTER OF NATURAL HISTORY.—The Smithsonian Institution, being desirous of obtaining information with regard to the periodical phenomena of animal and vegetable life in North America, respectfully invites all persons who may have it in their power, to record their observations, and to transmit them to the Institution. The points to which particular attention should be directed, are the first appearance of leaves and of flowers in plants; the dates of appearance and disappearance of migratory or hybernating animals, as Mammalia, Birds, Reptiles, Fishes, Insects, &c.; the times of nesting of Birds, of moulting and littering of Mammalia, of utterance of characteristic cries among reptiles and insects, and any thing else which may be deemed noteworthy.

A list of plants is appended, to which particular reference should be had in making observations. It has been prepared from materials furnished by Dr. John Torrey and others, and will be found to contain many species distributed throughout the United States, together with a number indigenous to, or cultivated in Europe. For the present, attention may be paid alone to the time of flowering of these species, this period in all cases being indicated by the first appearance of the anther in the expanding flower.

The Smithsonian Institution is also desirous of obtaining detailed lists of all the animals and plants of any locality throughout this continent. These, when practicable, should consist of the scientific names, as well as those in common use; but when the former are unknown, the latter may be employed. It is in contemplation to use the information thus gathered, in the construction of a series of tables, showing the geographical distribution of the animal and vegetable kingdoms in North America.

List of Plants to be particularly observed.

Acer rubrum, L., Red or soft maple.
—— pseudo-platanus, L., European sycamore.
—— saccharinum, L., Sugar maple.
Achillea millefolium, L., Millefoil or yarrow.
Actea rubra, Willd, Red baneberry.
—— alba, Bigelow, White baneberry—necklace weed;
Asclepias (syriaca) cornuti, L., Milkweed.
Æsculus hippocastanum, L., Horsechestnut, (fruit rough and prickly.)
—— glabra, Willd., Ohio Buckeye, (fruit rough and prickly.)
—— pavia, or flava, Ait., Yellow buckeye; (fruit smooth.)
Ailanthus glandulosus, Tree of heaven.
Amelanchier canadensis, Torr. and Gray, Shad bush, serviceberry.

Ampelopsis quinquefolia, Michx., American ivy—Virginia creeper.
Alisma plantago, L., Water plaintain.
Amygdalus nana, L., Flowering almond.
Anagallis arvensis, L., Pimpernel, Poor man's weather glass.
Anemone nemorosa, L., Windflower; wood anemone.
Aplectrum hyemale, Nutt., Putty root, or Adam and Eve.
Apocynum androsæmifolium, L., Dogbane.
Aquilegia canadensis, L., Wild columbine.
Amaryllis atamasco, L., Atamasco lily.
Arethusa bulbosa, L., Arethusa.
Arum triphyllum, L., Indian turnep.
Aristolochia sipho, D'Her., Dutchman's pipe.
Azalea nudiflora, L., Common red honeysuckle.
Bignonia (Tecoma) radicans, Juss., Trumpet creeper.
Catalpa bignonioides, Walt., Catalpa tree.
—— Indian bean.
Caltha palustris, L., Marsh marigold.
Carpinus americana, Michx., Hornbeam, iron-wood.
Celastrus scandens, L., Bitter sweet, wax work.
Convolvulus purpureus, L., Common morning glory.
Cercis canadensis, L., Red bud; Judas tree.
Chelidonium majus, L., Celandine.
Chionanthus virginica, L., Fringe tree.
Cimifuga racemosa, Ell., Black snake root; rattle snake root.
Claytonia virginica, L., Spring Beauty.
Corchorus japonicus, Yellow rose; (flowers all the year.)
Cornus florida, L., Flowering dogwood. (The time of expansion of the real flower, not of the white involucre.)
Cratægus crus-galli, L., Cockspur thorn.
—— coccinea, L., Scarlet fruited thorn.
—— oxycantha, L., English hawthorn.
Cynoglossum officinale, L., common hound's tongue.
Dentaria laciniata, Muhl., Cut leaved tooth-wort.
Dicentra cucullaria, D. C., Dutchman's breeches.
Digitalis purpurea, L., Purple fox-glove.
Draba (Erophyla) verna, L., Whitlow grass.
Epigæa repens, L., Trailing arbutus; ground laurel.
Erythronium americana, Smith, Dog tooth violet, or adder's tongue.
Geranium maculatum, L., Cranesbill.
Gentiana saponaria, L., Soapwort gentian.
Gleditschia triacanthos, L., Three thorned acacia, honey locust.
Gillenia trifoliata, Mœnch., Indian physic.
Gymnocladus canadensis, Lam., Kentucky coffee-bean tree.
Halesia tetraptera, Willd., Snow-drop tree.
Hepatica triloba, Chaix., Round lobed liver-wort.
Houstonia cœrulea, Hook, Bluets, innocence, &c.
Hypericum perforatum, L., St. John's wort.
Hydrangea arborescens, L., Wild hydrangea.
Iris versicolor, L., Large blue flag.
Juglans regia, L., English walnut.
—— nigra, L., Black walnut.
Kalmia latifolia, L., Mountain laurel.
Lamium amplexicaule, L., Dead nettle
Laurus benzoin, L., Benzoin odoriferum, Nees., Spice bush, Benjamin bush.
Lappa major, (Arctium lappa,) Gærtn., Common burdock.
Ligustrum vulgare, L., Common privet.
Lobelia cardinalis, L., Red cardinal flower.
Lonicera periclymenum, L., Foreign spurs.
—— sempervirens, Ait., trumpet honeysuckle.
Lonicera tartarica, L., Foreign spurs.
Linaria vulgaris, Mill., Common toad flax.
Lupinus perennis, L., Wild lupine.
Lilum philadelphicum, L., Wild lily.
Liriodendron tulipifera, L., Tulip tree, American poplar.
Magnolia glauca, L., Small or laurel magnolia, sweet bay.
Morus rubra, L., Red mulberry.
Nuphar advena, Ait., Yellow pond lily, splatterdock.
Nymphæa odorata, Ait., Sweet scented water lily.
Orontium aquaticum, L., Golden club, never-wet.
Oxalis violacea, L., Violet wood sorrel.
Platanus occidentalis, L., Buttonwood, sycamore.
Persica vulgaris, L., Peach.
Lodophyllum peltatum, L., Mandrake, May apple.
Pentstemon pubescens, Sol, Downy pentstemon.
Pontederia cordata, L., Pickerel weed.
Populus tremuloides, Michx., American aspen.
Pogonia ophioglossoides, Nutt, Adder's tongue.
Ptelea trifoliata, L., Shrubby trefoil.
Pulmonaria (Mertensia) virginica, D. C., Lung-wort.
Pyrus communis, L., Common pear tree.
Pyrus malus, L., Common apple tree.
Quercus alba, L., White oak.
Rhamnus cathartica, L., Common Buckthorn.
Rhus cotinus, L., Smoke tree.
—— typhina, L., Staghorn sumac.
Rhus glabra, L., Smooth sumach.
Ribes rubrum, L., Currant.
—— grossularia, Gooseberry.
Robinia pseud-acacia, L., Common locust.
Rosa centifolia, L., Hundred leaved or cabbagge rose.
—— Carolina, L., Swamp rose.
Rubus odoratus, L., Purple flowered raspberry.
Sagittaria sagittifolia, L., Arrow weed.
Sambucus canadensis, L., Common elder.
—— nigra, L.
Sanguinaria canadensis, L. Blood root.
Saponaria officinale, L., Soapwort, bouncing bet.
Sarracenia purpurea, L., Side-saddle flower.
Saxifragra virginiensis, Michx., Early saxifrage.
Sassafras officinale, Nees., Sassafras.
Silene pennsylvanica, Michx., Wild pink.

Smilacina bifolia, Ker., 2 leaved Solomon seal.
Staphylea trifolia, L., American bladder nut.
Syringa vulgaris, L., Lilac.
Symplocarpus fœtidus, Salisb., Skunk cabbage.
Tilia americana, L., Bass wood, white wood, American lime, or linden.
Tradescantia virginica, L., Spider-wort.
Ulmus americana, L., American elm.
Verbena hastata, L., Blue vervain.
Viburnum opulus, L., Snowball bush.
—— opulifolium, Mx., Nine bark.
Viola lanceolata, L., Lance leaved violet.
—— cucullea, Ait., Hood leaved violet.
Vitis æstivalis, Mich., Summer grape.

First appearance of the following animals, and if possible, time of depositing eggs.

Pandion carolinus, Gm., Fisk hawk.
Hirundo purpurea, L., Martin.
Tardus migratorius, L., Robin.
Sialia Wilsonii, Sw., Blue bird.
Agelaius phoeniceus, L., Red wing black-bird, and any other species of birds.
Salmo salar, L., Salmon
Alosa, Shad.
Acipenser, Sturgeon.
Cry of toads and frogs.
—— Catydid.
—— Locust. (Cicada.
Appearance of fire-flies.

Albany and Rensselaer Horticultural Society.—The annual show of fruits on the 10th and 11th of September, was one of the best exhibitions of the Society. The display of flowers was also large and respectable, but was less full and perfect in some departments than it would have been, if there had been a sufficient supply of rain. Plums and pears formed a fine show—the former being very extensive, and comprising most of the choice varieties for which this vicinity is justly celebrated. The principal exhibitors of this fruit were Messrs. Dorr, Denniston, and Prentice. Mr. Denniston exhibited several new seedlings of evident merit, for one of which, called Dorr's Favorite, a premium was awarded. He also showed a seedling Green Gage, which so closely resembled the parent in every respect as to be pronounced identical. A very large seedling plum was also exhibited by Wm. Hallenbake, of Greenbush, raised by him. It is fully equal in size to the Red Magnum Bonum, and bears a striking general resemblance to that variety, but is much superior to it in quality, being nearly equal to the best of the dark colored varieties. It received a premium as a seedling. A specimen of prune, raised from seed, sent from Germany, was exhibited by Mr. C. H. Anthony, of Albany. This fruit is raised in several gardens in this vicinity, and might easily be produced here to any extent.

A large and handsome collection of pears was exhibited by Henry Vail, Esq., of Troy, and collections, embracing several of the most esteemed varieties, were also shown by Messrs. V. P. Douw, B. B. Kirtland, E. M. Alystyne, Greenbush; J. Rathbone, E. Dorr, Jefferson Mayell, John S. Goold, J. D. Chism, Wm. James, Albany.

There was a good show of apples,—the principal exhibitors being Messrs. Prentice and Kirtland.

Few peaches were exhibited, though there were some very fine ones from E. Wood, Watervliet, Dr. A. March, and J. Rathbone, Albany.

Grapes, comprising some very excellent specimens, both from houses and open air, were shown. Of the former, those offered by Mr. Henry Vail, attracted much attention. They comprised specimens of the Black Hamburgh and White Frontignac, each bunch of which as we were informed by Mr. Quinn, the gardener, weighed upwards of a pound. They were certainly highly creditable to the skill of the cultivator. The specimens shown by Mr. J. Rathbone were also fine. Isabella and Black Cluster, from open gardens, in fine perfection, were shown by Messrs. E. H. Pease, Jos. Cary, V. P. Douw, and W. W. Frothingham.

There was a good show of melons of the best quality, by Messrs. Dorr, Menand, Prentice, Kirtland, Goold, Mayell, and others.

Vegetables made a large array, and the specimens were generally of excellent quality. Among the collections we noticed those of Messrs. Prentice, Goold, Mayell and Newcomb.

Flowers, comprising dahlias, roses, verbenas, asters, &c., as well as many green-house plants, made a fine appearance, and the collections of Messrs. Menand, Wilson, Douw, Rathbone, D. T. Vail, Newcomb, Goold, and others, attracted much attention and praise.

New-York State Fair.—Floral Hall consisted of an elliptical tent 80 feet wide and 140 feet long. Its interior arrangements were designed in excellent taste. Next to its outer circumference, and extending round the whole tent, was a series of terraced shelves, for the exhibition of fruit. These shelves were very

closely filled. Next to this was the broad passage for the spectators. Inside of this passage was the series of tables, parallel to the fruit tables, for the flowers. These presented a very rich display. The interior area was occupied with a large mass of rockwork in the centre, interspersed with ferns, cactuses, &c., surmounted with a massive rustic tree, supporting baskets of fruits, flowers, grapevines, &c. On each side of the rockwork were high terraces of shelves densely filled with a rich display of greenhouse plants from several contributors.

Among the fruits which excited most attention, were the fine exhibition of peaches—many specimens of Crawford's Early measuring from 10 to 11 inches in circumference. Bartlett and Stevens' Genesee pears were exhibited possessing great beauty; and there was a profusion of fine apples. The following were among the principal contributors:—

W. R. Smith, of Macedon, N. Y., exhibited a collection of large glass jars, containing cherries, strawberries, peaches, &c., beautifully preserved in a fresh state, sealed air-tight. Bissell and Hooker of Rochester, very fine bunches of Black Hamburgh, Golden Chasselas and other exotic grapes, grown in a cold house; several other collections of foreign grapes grown in a similar way, including Muscat of Alexandria, Royal Muscadine, Hamburgh, &c., show the progress of the culture of these varieties. Among the principal contributors, who all furnished extensive collections of fruits, were Benjamin Hodge, of Buffalo; Thorp, Smith & Co., of Syracuse; J. J. Thomas, of Macedon; W. F. and E. Smith, Geneva; and from Ellwanger & Barry, C. J. Ryan, Bissell & Hooker, N. Hayward, S. Moulson, and others of Rochester and vicinity. John Morse of Cayuga Bridge, exhibited 43 sorts of pears, in which we observed very fine specimens of Beurre Bosc, Flemish Beauty, and Pratt. Ellwanger & Barry had more than a hundred sorts of pears, embracing some fine and rare sorts. One of the best collections of plums was from E. Dorr, of Albany.

Among the floral contributions, we observed extensive collections from Wm. Webb and B. Hodge, of Buffalo, John Donnellan and C. Powis, of Greece, and King and Dawe, Ellwanger & Barry, A. Frost & Co., S. Moulson, Wm. Webster, and C. J. Ryan, of Rochester. A beautifully constructed floral alcove was presented by A. Frost & Co.; a large and beautiful box of flowers, of some 200 sorts, by Mary Devoe, of Aurora, Cayuga county; and a very striking and singular conceit,—a finely proportioned pony, five feet long, surmounted by an equestrian "bloom-er," the whole composed of flowers quite tastefully arranged, was exhibited by L. E. Smith, of Saratoga county, New-York.—*Cultivator.*

English and Scotch Acres.—The English acre contains 4,840 square yards—the Scotch, 6,150. The Scotch acre, therefore, is rather more than one-fourth the largest.

Answers to Correspondents.

Cheap Cottages.—*A Massachusetts Subscriber.* You will find the ground plans with descriptions, of the cheap cottages you refer to, in our work on "Country Houses," pages 73 and 95. The first part of this work, on Cottages and Farm Houses, may be had separate at $2—or the whole, including Villas and Furniture, for $4. It is published by Appleton & Co., New-York, and may be ordered through any country bookseller.

Grapes.—*C. P. Williams,* (Albany.) The leaf blight which turns brown the edges of the native grape, has not been satisfactorily explained. Picking off the leaves affected appears to prevent its spreading. *B. Johnson.*—The Clinton Grape is worthy of trial as a wine grape. It is much earlier and hardier than the Isabella. Norton's Seedling has borne with us for several years past, and we have rejected it as worthless for the table. The Elsinburgh is the best of all the small native sorts—being delicate in flavor, sweet, and entirely without hard pulp. *W. B. P.*, (Buffalo.) You have allowed your vine to extend too much, and exhaust itself. Dig in this fall, about the roots, over an area of some 15 or 20 feet square, as much stable, or other strong animal manure as will cover the surface of the ground. Next spring apply half a peck of plaster as a top dressing. This will effectually renovate the vine.

Select Lists of Fruits.—*An Amateur,* (Pittsburgh.) The following are very fine new pears, whose excellence has been proved in the northern states. Bonne des Lees—August—melting, very juicy; Beurre Langlier—December—melting, vinous flavor; Suzette de Bavay—Jan. Feb.—sweet, sprightly; Brandywine—Sept—sweet, very juicy; Alpha—Oct.—buttery, fine. Of the standard pears we recommend to you the following for a small collection, viz: *Early pears*—Bartlett, Dearbon's Seedling, Tyson, Rostiezer. *Autumn pears*—Beurre d'Anjou,

Fondante d'Automne, Duchess d'Angouleme, Doyenne Boussock, Heathcote, Louise Bonne de Jersey. *Winter pears*—Beurre d'Arembergh, Lawrence, Winter Nelis. For three plums, we would plant Green Gage, Purple Favorite, Imperial Gage; three cherries—May Duke, Black Tartarian, Downer's Late. The Breda is the hardiest apricot of first rate quality.

Keeping Grapes.—*W. S.*, (New-York.) If you wish to preserve your grapes very perfectly, take large earthern jars and fill the bottom one inch in depth with dry charcoal dust. Pick the clusters in a dry cool day—dip the end of the stalk in melted sealing wax; cut out every decayed or wilted berry with a small scissors. Wrap each bunch in soft paper, and lay one upon another till the jar is full. Then put the lid of the jar on, and cover it all round the edges with pulverised charcoal. Set the jars away on shelves in a cool dry cellar, or room where the temperature is low without frost.

Taking up Green-house Plants.—*A Lady in Ohio.* First remove all the earth very carefully, by slicing it gradually away with the spade, so as to leave an unbroken ball, containing the roots, about the size of the pot or tub into which you wish to remove the plant. Then soak this ball of earth very plentifully with water, so that it is quite saturated. Leave it all night to drain off. In the morning you will find the ball to adhere well to the roots, and you can then lift it and pot it with little or no check to the plant. For forty-eight hours after removal it is best to place the transplanted exotics in a close frame or cellar—where the air is damp.

Tomatoes. — *William*, (New-Bedford.) If you pull up the tomato plants before the frost has touched them, and hang them up in a dry light seed room, or garret, the fruit will continue to ripen for several weeks.

Evergreens.—*R. Van W.*, (Oneida Co.) You may transplant evergreens successfully at any season, if you take balls of earth with them. Otherwise, they grow most readily when the buds have just started in the spring. The white pine is the best for your purpose—it transplants easily, grows fast, and holds its color all seasons. The English Yew is a little tender north of New-York. We are not confident that the Chili Pine will prove entirely hardy with you—but the Deodar will, and is a most graceful tree. There is no more ornamental hardy evergreen for general purposes, than the Norway Spruce.

Clean Trees for Streets.—*A Philadelphian.* There are no better or cleaner trees for streets, than the Silver Maple, Sugar Maple and Tulip tree—not one of which, so far as we have observed, are infested with insects. Lindens and Elms are always hazardous in this respect.

Preparing Fruit Gardens.—*R.*, (Hartford, Ct.) First give the soil a heavy dressing of stable manure and ashes—then trench it two spades deep. Plant your trees in good composted soil, and mulch them with three inches of tan-bark—after the ground has settled over the roots. In your light soil we would never stir or dig the ground at all, over the roots of fruit trees. But every other autumn we would remove the mulching—give a top-dressing of decomposed manure and ashes, and replace the tan again upon the top—keeping it there summer and winter—by renewing it as often as necessary. Nothing is so injurious to fruit trees in light soils, as to be constantly stirring the soil, and breaking the young fibres.

STRAWBERRY HILL.—(See page 510.)

THE

Horticulturist,

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

A Few Hints in Landscape Gardening.

NOVEMBER is, above all others, the tree-planting month over the wide Union. Accordingly, every one who has a rood of land, looks about him at this season, to see what can be done to improve and embellish it. Some have bought new places, where they have to build and create everything in the way of home scenery, and they, of course, will have their heads full of shade trees and fruit trees, ornamental shrubs and evergreens, lawns and walks, and will tax their imagination to the utmost to see in the future all the varied beauty which they mean to work out of the present blank fields that they have taken in hand. These, look for the most rapid-growing and effective materials, with which to hide their nakedness, and spread something of the drapery of beauty over their premises, in the shortest possible time. Others, have already a goodly stock of foliage and shade, but the trees have been planted without taste, and by thinning out somewhat here, making an opening there, and planting a little yonder, they hope to break up the stiff boundaries, and thus magically to convert awkward angles into graceful curves, and harmonious outlines. Whilst others others, again, whose gardens and pleasure-grounds have long had their earnest devotion, are busy turning over the catalogues of the nurseries, in search of rare and curious trees and shrubs, to add still more of novelty and interest to their favorite lawn and walks. As the pleasure of creation may be supposed to be the highest pleasure, and as the creation of scenery in landscape gardening is the nearest approach to the matter that we can realise in a practical way, it is not difficult to see that November, dreary as it may seem to the cockneys who have rushed back to gas-lights and the paved streets of the city, is full of interest, and even excitement, to the real lover of the country.

It is, however, one of the characteristics of the human mind to overlook that which is immediately about us, however admirable, and to attach the greatest importance to

whatever is rare, and difficult to be obtained. A remarkable illustration of the truth of this, may be found in the ornamental gardening of this country, which is noted for the strongly marked features made in its artificial scenery by certain poorer sorts of foreign trees, as well as the almost total neglect of finer native materials, that are indigenous to the soil. We will undertake to say, for example, that almost one-half of all the deciduous trees that have been set in ornamental plantations of the last ten years, have been composed, for the most part, of two very indifferent foreign trees—the Ailantus and the Silver Poplar. When we say indifferent, we do not mean to say that such trees as the Ailantus and the Silver Poplar, are not valuable trees in their way—that is, that they are rapid growing, will thrive in all soils, and are transplanted with the greatest facility—suiting at once both the money-making grower and the ignorant planter—but we do say, that when such trees as the American Elms, Maples and Oaks, can be raised with so little trouble—trees as full of grace, dignity, and beauty, as any that grow in any part of the world—trees, too, that go on gathering new beauty with age, instead of throwing up suckers that utterly spoil lawns, or that become, after the first few years, only a more intolerbable nuisance every day—it is time to protest against the indiscriminate use of such sylvan materials—no matter how much of "heavenly origin," or "silvery" foliage, they may have in their well sounding names.

It is by no means the fault of the nurserymen, that their nurseries abound in ailantuses and poplars, while so many of our fine forest trees are hardly to be found. The nurserymen are bound to pursue their business so as to make it profitable, and if people ignore oaks and ashes, and adore poplars and ailantuses, nurserymen cannot be expected to starve because the planting public generally are destitute of taste.

What the planting public need is to have their attention called to the study of *nature*—to be made to understand that it is in our beautiful woodland slopes, with their undulating outlines, our broad river meadows studded with single trees and groups allowed to grow and expand quite in a state of free and graceful development, our steep hills, sprinkled with picturesque pines and firs, and our deep valleys, dark with hemlocks and cedars, that the real lessons in the beautiful and picturesque are to be taken, which will lead us to the appreciation of the finest elements of beauty in the embellishment of our country places—instead of this miserable rage for "trees of heaven" and other fashionable tastes of the like nature. There are, for example, to be found along side of almost every sequestered lawn by the road-side in the northern states, three trees that are strikingly remarkable for beauty of foliage, growth or or flower, viz: the Tulip tree, the Sassafras, and the Pepperidge. The first is, for stately elegance, almost unrivalled among forest trees: the second, when planted in cultivated soil and allowed a fair chance, is more beautiful in its diversified laurel-like foliage than almost any foreign tree in our pleasure grounds: and the last is not surpassed by the orange or the bay in its glossy leaves, deep green as an emerald in summer, and rich red as a ruby in autumn—and all of them freer from the attacks of insects than either larches, lindens, or elms, or a dozen other favorite foreign trees,—besides being unaffected by the summer sun where Horse-chestnuts are burned brown,

and holding their foliage through all the season like native-born Americans, when foreigners shrivel and die; and yet we could name a dozen nurseries where there is a large collection of ornamental trees of foreign growth, but neither a sassafras, nor a pepperidge, nor perhaps a tulip tree could be had for love or money.

There is a large spirit of inquiry and a lively interest in rural taste, awakened on every side of us, at the present time, from Maine to the valley of the Mississippi—but the great mistake made by most novices is that they study *gardens* too much, and *nature* too little. Now gardens, in general, are stiff and graceless, except just so far as nature, ever free and flowing, re-asserts her rights, in spite of man's want of taste, or helps him when he has endeavored to work in her own spirit. But the fields and woods are full of instruction, and in such features of our richest and most smiling and diversified country must the best hints for the embellishment of rural homes always be derived. And yet it is not any portion of the woods and fields that we wish our finest pleasure-ground scenery precisely to resemble. We rather wish to *select* from the finest sylvan features of nature, and to recompose the materials in a choicer manner—by rejecting anything foreign to the spirit of elegance and refinement which should characterize the landscape of the most tasteful country residence—a landscape in which all that is graceful and beautiful in nature is preserved—all her most perfect forms and most harmonious lines—but with that added refinement which high keeping and continual care, confer on natural beauty without impairing its innate spirit of freedom, or the truth and freshness of its intrinsic character. A planted elm of fifty years, which stands in the midst of the smooth lawn before yonder mansion—its long graceful branches towering upwards like an antique classical vase, and then sweeping to the ground with a curve as beautiful as the falling spray of a fountain, has all the freedom of character of its best prototypes in the wild woods, with a refinement and a perfection of symmetry which it would be next to impossible to find in a wild tree. Let us take it then as the type of all true art in landscape gardening—which selects from natural materials that abound in any country, its best sylvan features, and by giving them a better opportunity than they could otherwise obtain, brings about a higher beauty of development and a more perfect expression than nature itself offers. Study landscape in nature more, and the gardens and their catalogues less,—is our advice to the rising generation of planters, who wish to embellish their places in the best and purest taste.

PREMATURE DECAY OF THE PEACH TREE.

BY J. P. KIRTLAND, CLEVELAND, O.

Fifty years since the peach tree grew vigorously, and almost spontaneously, in many sections of New-England, where the soil and climate were congenial. In more recent times, it has flourished with equal vigor in many parts of the western country, particularly the state of Ohio.

It has required no special powers of observation to discover that it has been gradually losing its healthfulness—till at length it cannot be cultivated without extra care. The

progress of this diseased condition has evidently advanced farther in the eastern states, than in the newer and more fertile regions of the west.

A knowledge of the pathology of a disease, whether in the animal or vegetable kingdom, often leads to the discovery of successful means of cure. With this view, attention has been directed to the nature and causes of this disorder. So far as they have been discovered, they seem to be dependant on the following, "*to wit*:"

1st. *The depredations of the Ægeria exitiosa*, or *Borer*.—The first stage of impairment was probably established by the attacks of this insect. It was known as early, or before the commencement of the present century, yet it was then met with only in limited numbers, and its depredations hardly attracted attention. At this time it has become so numerous that every peach tree is annually assailed by from half a dozen to a dozen individuals, in the larvæ state.

They perforate the crown of the roots, and excavate it so extensively as to nearly cut off all communication with the body. Before the injury they inflict in one year is corrected by the growth of the ensuing season, a second generation renews the attack. The tree finally sinks under repeated injuries, or perhaps spins out a sickly existence for a few years.

2d. *Exhaustion of the Soil*.—No species of tree, shrub, or vegetable, can retain health, vigor and productiveness, without a requisite supply of inorganic elements in the soil. Few soils originally contain supplies sufficient to sustain a successive growth of the same species of trees, in the same locality. When a forest is suddenly removed, its place is sure to be occupied by a different growth of timber, and an attempt at cultivating the same kind of crop upon the same field, repeatedly, is sure to be met with manifestations of exhaustion, in the form of disease and unproductiveness.

Such evidences are now too common with the peach tree, when it is planted on soils exhausted of the essential elements. The doctrine is not perhaps exploded, that the excretions of vegetables exert an unfavorable influence on a succeeding crop of a similar kind. If it be correct, it may aid in throwing light on the nature and causes of the decay of the peach tree.

3d. *The Curl of the Leaf*.—Of late years, the first developed leaves in the spring season, become diseased with a spongy and malignant growth, which, in a few days' time, occasions them to fall. This occurs at a period when the vigorous circulation of the sap requires a corresponding action in those important organs. A second growth is soon forced out, which ultimately restores the tree apparently to its wonted health and vigor.

It is, however, evident, that though the recuperative powers of nature may for once, twice, or even thrice, restore a growth of leaves, the shock must at length impair the vitality, and induce an unhealthy condition. This curl of the leaf is produced by the punctures of a small plant louse, perhaps the *Aphis persica*, or its analogue. It is described by Dr. Harris in his Treatise on Destructive Insects, also in Kollar's work, to which the reader is referred.

People judging of the size of this insect from the extent of its injurious impressions, might overlook it, expecting to find a huge monster where a mite exists, or very likely by searching for it long after its day and generation had passed away.

4th. *The Yellows*.—It is questionable whether anydistinct disease occurs, to which this name is applicable. Perhaps it is only a collection of symptoms arising from causes previously noticed—acting either individually or collectively. Facts seem to favor this view—though the insight of popular opinion is in favor of its being a *specific* and *contagious* disease.

In estimating the power and extent of the operation of these causes, it should be recollected that an injurious impression acting constantly upon successive generations, of either animal or vegetable species, may ultimately establish an hereditary entailment, that may be propagated in the form of predispositon to disease, or disease itself. The converse is equally true in producing health or physical development.

These several causes have been exerting their influences on the peach tree for a long term of years—impairing the stamina and health of its fruit germs. These impressions have been propagated and repropagated, in conjunction with the action of the primary causes of impairment, till at length we have only a sickly progeny.

If this view be correct, we have two indications to fulfil in working a cure.

First. To withdraw or counteract the primary causes of impairment.

Second. To propagate only from healthy pits.

Let us begin with perhaps the main cause—

Ægeria or *Borer.*—This depredator can only be assailed with succces by preventing the deposition of the egg into the crown of the root, or by the destruction of the larvæ after it has hatched. Embankments of earth, lime, ashes, tobacco, &c., have been tried for these purposes, but with not very perfect success. During a late tour to the eastern states, I had an opportunity of seeing the results of the use of a remedy devised by E. M. Pomeroy, Esq., of Wallingford, Conn. He seems to have found an application which is sure to prevent the perfect insect from laying her eggs in the crown of the roots—the only point at which it can exist and do injury—and is equally certain to destroy the larvæ which may have already commenced their career of destruction. The cost and labor of its use are very trifling. Further trials are necessary, to test its certainty. As the discoverer has laid his claims before the Commissioner of Patents, at Washington, I shall say nothing more in regard to it—only expressing the belief that it will prove successful.

The *second cause*, exhaustion of the soil, must be corrected by the aid of agricultural chemistry. Lime, ashes, bone-dust, salt, barn and poultry manure, &c., empirically applied, will generally correct the evil. No tree pays better for high feeding than the peach, on a silicious soil.

The *third cause, the Aphis*, seems to be beyond control where it exists in large orchards. It may be destroyed on a few trees by whale-oil soap-suds, and tobacco water.

The *fourth cause, the Yellows*, I must leave for the investigation and management of those among whom it occurs. Fortunately, little is known of it in Ohio. For the purpose of propagating healthy stocks, pits of the peach should be obtained from sections of the country where this diseased condition does not prevail. J. P. K.

Cleveland, Ohio, Oct. 8, 1851.

Remarks.—Professor Kirtland's remarks are closely to the point, and are particularly well timed. We pointed out, five years ago, that the peach tree was becoming enfeebled by bad cultivation, and careless propagation—and the fact cannot be too strongly urged upon nurserymen and orchardists. In fact, the peach has hitherto been cultivated so carelessly, that to an European fruit-grower it would not be called cultivation at all—only a downright abuse of the natural powers of the tree. It is, however, leading to the inevitable result of artificial degeneracy, and henceforth it will require something like attention and care to produce good peaches. Ed.

THE WILLIAMSON PEAR.

BY H. WOOD, LONG-ISLAND, N. Y.

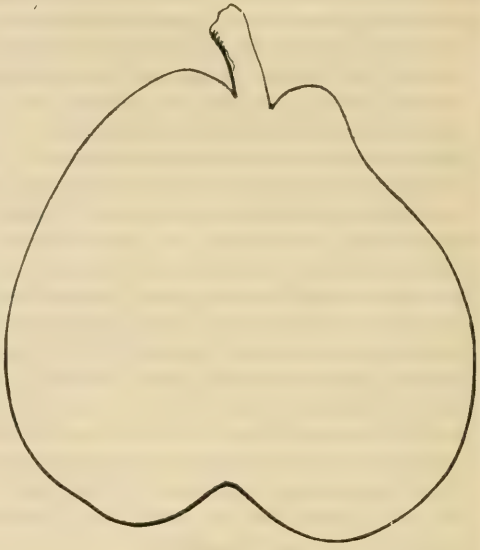
A. J. Downing, Esq.—I send you by express, two specimens of a seedling pear, which sprung up wild in a piece of woodland on the south side of Long-Island, belonging to Nicholas Williamson, Esq. The tree attracted no attention until Mr. W., having occasion to clear the timber from the land, left it exposed to the sun and air, when it soon commenced bearing.

There can be no doubt of its being a natural seedling, but whether it is an acquisition of any value, I leave you to determine. Many believe our American seedlings will prove more hardy and profitable than the delicate foreign varieties in cultivation; and I think I have seen remarks of your own to that effect.

The tree appears quite hardy, is a good grower and bearer.

Mr. W. has sold the fruit at high prices in Fulton market, and those who had it once invariably desired to purchase it again, having readily retailed them for sixpence each.

The specimens sent are not above the average size of this fruit. The tree stands in sod ground, and has never been manured or cultivated in any manner.



The Williamson Pear.

You will observe that these specimens show no calyx; this is a distinct characteristic of the fruit, so far as I have observed, and must decide the originality of the variety. Should you think it worthy of publicity, I propose to christen it the "Williamson Pear." From my knowledge of the gentlemanly owner of this tree, I am confident he will be happy to supply you with grafts, should you desire to obtain the variety. Yours, H. Wood.

Bramble worth Cottage, Oct. 2, 1851.

We are a little reserved in our praise of new varieties—but there can be no hesitation in pronouncing this pear one of the very best. The flavor is of the rich saccharine-vinous, well known in such fruits as Surpasse Virgalieu, Beurre Bosc, &c. The fruit has a rich yellow color, abundantly sprinkled with russet dots, and has a "thorough-bred" look and taste in all respects. Cultivators will do well to get possession of what appears to be a new American sort of such a high grade.

The following is the pomological description of the fruit: Medium size—obovate, narrowing pretty rapidly to the stalk. Stalk, short and stout, set in a moderate cavity—which is a little higher on one side than the other. Calyx, none—its place is occupied with a small scar—set in a deep, rather narrow, russeted basin. Skin, rich golden yellow at maturity—thickly sprinkled with russet dots—and considerably russeted at each end. Seeds, small and flattened. Flesh, yellowish white, fine grained, melting, (though more solid in texture than most melting pears,) with an abundant juice, and a rich sugary, and vinous flavor—October. Ed.

ON THE LIMITED DURATION OF VARIETIES OF PLANTS.*

BY JOHN TOWNLEY, MOUNDVILLE, WIS.

Dr. LINDLEY next touches on the apple; fortunately he has referred to three English varieties which are supposed to be in the winter of their age; the Golden Pippin, Golden Hervey, and the Red-streak. Respecting the Golden Pippin, he states that healthy trees were many years since shown to exist in Norfolk, and in warm dry, places this variety has no particular appearance of suffering. Trees of it are growing vigorously in Madeira. It is also growing in France, whence trees have been brought to England, which are said to be recruited by the fine dry climate of the former country, and this is considered to be a conclusive answer to Mr. KNIGHT's hypothesis. Previously, however, to arriving at this positive conclusion, Dr. LINDLEY should, if only out of respect to the "memory of THOMAS ANDREW KNIGHT," have considered, and frankly stated, that he had anticipated what would be the effect of such like circumstances on the health of aged varieties. Mr. KNIGHT observed, that they seemed like invalids, to enjoy the benefit of a better climate—that a gravelly, or a wet soil, or a cold preceding summer, or a high exposed situation, adds much to the virulence of the disease; on the other hand, he states "it appeared probable that the latter period of the existence of the apple tree *would be considerably prolonged in a southern climate*, for all the old varieties succeeded best in warm situations, and the most diseased flourish with the greatest vigor when trained to a south wall." And yet with such observations as these by Mr. KNIGHT on record, Dr. LINDLEY would fain persuade us, that because trees of the Golden Pippin, in a comparatively healthy state, yet exist in France and Madeira, and in warm dry places in England, therefore this variety is not declining in vigor, and wearing out.

The Golden Pippin was formerly a general favorite. Mr. KNIGHT, says,* "it was very extensively planted in Herefordshire, before the end of the 17th century, and many very large orchards of it still remained in the middle of the eighteenth century; and as long as the tree possessed even a moderate degree of health and vigor, the Golden Pippin retained the character of a very prime cider apple. But owing to the debilitated state of the variety in which the vital principle seems nearly expended, much of the fruit generally remains imperfect and immature, and almost all the cider which it has afforded within the last twenty years, has been crude or thin, and very frequently acetous. No attempts to propagate it as a cider apple, are now made in Herefordshire, though many trees of it of very large size, still remain." If this apple was formerly grown with so much success, and was so highly prized for its qualities in Herefordshire, and if varieties of plants do not in the course of time become debilitated, and more susceptible of disease and injury from adverse influences, then why in the name of common sense, does not the Golden Pippin now flourish, yield excellent cider, and grow to a tree of very large size, in the same soil, the same climate, and with the same treatment, and still continue to be a universal favorite in that county?

It cannot, I think, be reasonably objected in this case, that the soil was probably exhausted of some particular aliment necessary for the healthy development of this apple. New orchards are not always planted on the sites of old ones; and if new land had the power of restoring this variety to health, so striking and much-wished-for a result must have been apparent to the most ordinary observer, and have become generally known.

* Continued from p. 476.—† Knight's Pomona Herefordiensis.

Besides, change of soil was one of the expedients specially resorted to with a view to restore old varieties to health, and proved to be inefficient, and the fact, moreover, that trees of the old varietes grow well when trained to a south wall, indicates, I think, most clearly, that it is not the soil, but the vitality of the plant, which is at fault. When the feeble powers of the plant are stimulated by the greater amount of heat afforded by a wall, it is enabled to obtain from the soil sufficient material to enable it to grow with apparent vigor, while in the same soil, as a standard, it is decrepid and diseased.

Respecting the Golden Hervey, Dr. LINDLEY says it is in all good gardens. This may be so; as Mr. KNIGHT says, "the trees of the Golden Hervey still posses a considerable share of health and vigor, and for culture in the garden only, it is not much impaired by age."

Of the Red-streak Dr. LINDLEY says "it is little known to him, and he has no evidence about it." But if varieties of the apple do not deteriorate and wear out, how is it that this, once the most famous cider apple known, is now all but extinct? Now it is of importance to prove that varieties of plants which were propagated by extension, and have disappeared, or nearly so, formerly possessed such a combination of good properties as to make it highly desirable to continue them for ever if possible.

That the Red-streak was held in great estimation may be inferred from PHILLIPS' poem named "cider."

> Let every tree in every garden own
> The Red-streak as supreme, whose pulpous fruit
> With gold irradiate, and vermillion shines.

EVELYN speaks of it as "the famous Red-streak;" and again, "the Gennet Moyle was preferred to the very Red-streak." "The Moyle of sweetest honied taste." It is also apparent by other remarks, that EVELYN considered the Red-streak had no rival in this or any other country. With regard to health and productiveness, EVELYN observes, "the Red-streak will at three years old grafting, give you fair hopes, and last a hundred years, if from sundry men's experience of more than sixty years, we may divine." When comparing the merits of the Golden Pippin with the Red-streak, he says of the former, "it is in no wise so proper for a cider orchard, not half so soon bearing, nor so certainly, nor in that quantity, nor in that fulness or security, for as it (the Red-streak) is no tall tree, so it is less exposed to blasts and the like." Then respecting the quality of its cider. In papers on cider and cider apples, published in Evelyn's Pomona, one writer says, "among cider apples the Red-streak bears the bell." Another observes, "the cider of the summer Red-streak is of a wonderful fragrant and aromatic quality." Evelyn mentions that a Mr. TAYLOR of Herefordshire challenged a London vintner that he would produce a cider which should excel his best Spanish or French wines—"the wager being deposited, he brings in a good Red-streak to a private house, and all the vintner could call to be judges pronounced against his wine." The vintner not being satisfied, two other wagers were entered into, but with a like result. Now for evidence of the decline of this once famous apple. In MARTYN'S edition of MILLER it is said, "the Red-streak so much celebrated by writers of the last century, appears almost to have survived its fame as a cider apple." Mr. KNIGHT in his Pomona Herefordiensis observes, "trees of the Red-streak can now no longer be propagated, and the fruit, like the trees, is affected by the debilitated old age of the variety, and has in a very considerable degree, survived those qualities to which was owing its former fame; the cider which has been made of it alone, within the last thirty years having rarely proved good." Here then we have most satisfactory proofs of a once famous apple; handsome, hardy, productive, and affording

cider of surpassing excellence; having become feeble, diseased and almost if not quite extinct. Such then, when they come to be examined, are the facts and arguments advanced by Dr. LINDLEY in support of his assertion that "there is not only no proof of the correctness of Mr. KNIGHT'S theory, but the strongest presumption to the contrary."

As in the case of the natural death of forest trees, the facts are too numerous and too well authenticated, proving that valuable varieties of plants propagated by extension, have ultimately become diseased and unproductive, and consequently extinct.

DR. LINDLEY thus explains these facts—"a tree is allowed from some cause or other to become unhealthy, a piece cut from it and put upon another tree, carries its disease with it; when again divided, the disease is again propagated; and this will go on so long as the unhealthy plants remain exposed to the circumstances which originally caused their bad health."

Adverse circumstances certainly tend to make plants unhealthy, and a variety of apple which has been in existence two hundred years is likely to have been exposed to a greater amount of damaging influences than a variety which has been in existence only fifty years; therefore we may reasonably conclude that the old variety, owing to the effect of these adverse external influences alone, will be less healthy than the younger variety.

Dr. LINDLEY may tell us that disease does not arise from internal but external circumstances. But the question will intrude, how are we to avoid these circumstances? what is "the some cause or other" which makes them unhealthy? If the plants of a variety in a certain locality only become diseased, then we might have some grounds for hope, but when we remember that of the apples mentioned by PARKINSON, the names only remain, and when we now know that old varieties of the apple and pear decline in vigor and productiveness, first in cold wet ungenial soils; lastly in warm dry situations, how are we to prevent this? "Change the circumstances; keep off the cause of the evil and the evil will gradually disappear as in the case of the Golden Pippin." Are we then to establish a plant hospital in the South of France or in Madeira; what other means are we to resort to, seeing that the Golden Pippin is the only instance mentioned of trees of an almost worn out variety existing in a comparative state of health.

The duration of both animal and vegetable life depends upon the original vigor of the constitution as well as adventitious circumstances. There are inherent as well as external influences with which we have to contend. Thus of human beings; many die in infancy, others may live a century. Of ten thousand born, hardly one may die through exhaustion of vitality, or sheer old age,—I mean, without the exhibition of any active disease. Again, of two children born with equally vigorous constitutions; one whose constitution has been subject to many trials may die in forty years, whilst the other more favorably circumstanced may live double that time. In like manner individual seedling plants differ greatly in constitutional vigor. Some we find are so weak that the first adverse influence to which they may be exposed destroys them, whilst other plants of the like kind and age, growing under the same circumstances, remain unharmed. Why is this? Because of the difference in constitutional vigor. Some external influence may have been the immediate cause of death, but the inherent feebleness of the plant was the predisposing cause which led to its destruction. So of plants with originally vigorous constitutions; few may die simply of exhaustion of vitality, and a tree in the prime of its existence may become unhealthy and diseased from various external causes; the soil may be wet or otherwise unsuitable, the roots may wander into an ungenial subsoil, or the leaves in an adverse season may be attacked by fungi, &c. But improve the soil, replant the trees and prevent their roots from reaching the subsoil, or let the fungi disappear, and the plants

being sound at heart, if I may so speak, will, owing to their inherent strength be restored to better health, exactly as in the case of animals in the prime of life laboring under local or transitory circumstances affecting their health. But we may graft a scion of an old nearly worn out variety on a healthy young stock, we may plant it in a situation where trees of the same variety continued, previously, in health and vigor upwards of a hundred years and where younger varieties now grow healthy and vigorously, but "the young stock," as Mr. Knight observed, "can give nutriment only, not new life;" it is found therefore, that the feeble scion, like a weak seedling, soon shows symptoms of disease. If it be objected that external influences first caused the feebleness, this may be said as reasonably of the infirmities of age in animals. It is inherent weakness in both which renders the attack of ordinary external influences formidable.

When a variety of apple or potato has arrived at the best and most productive period of its existence, is it rational to suppose or expect that the ingenuity of man can keep it stationary forever, and prevent its decline? The inherent, and many of the external influences which lead to debility and death, are beyond the control of man; and every adverse influence to which plants or animals are exposed, contributes more or less, to prostrate and wear out the constitution; and the power of external influences increases in proportion to the diminution of vital power. Man, by various expedients, may postpone the evil day, but he cannot prevent its coming. He may, for instance, betake himself to Italy or Madeira, in order to bolster up his feeble constitution, and he may take plants of his favorite old invalid fruit trees, with him, as a warmer climate is found to be as beneficial to them as to him, and both may return to their native land considerably fortified, but certainly not restored to the vigor of youth.

Proofs of the degeneracy of varieties of the potato, are too numerous to admit of doubt. The changes induced in a variety by time, are, I believe, very accurately described by the editor of the Irish Farmer's Magazine.* "In a few years," he observes "after a variety has been raised from seed, it arrives at its greatest degree of productiveness; then it continues annually, for a number of years, to decrease in productiveness, but to become more valuable for food, being more farinaceous, or as it is termed, drier; afterwards it begins to lose this quality, also, and rapidly to decline, until in a few years more, it is utterly useless." Dr. Lindley offers an explanation of these facts also, which he wishes us to substitute for that of Mr. Knight; "a potato forced in such land," he observes, "has a feeble constitution, and a small matter makes it ill; its unhealthiness is communicated to its successors, and so the evil is ceaselessly augmented." He further remarks, "after six months unnatural treatment during winter, the tubers are committed to the ground, and though we have no reason whatever, to connect this practice with the blight, it is impossible to doubt that such a practice, long persevered in, must have a tendency to diminish the constitutional vigor of the crop." The remedy proposed is to raise potatoes for sets upon a different principle from those which are for the table; they must be grown in poor, light land, left in the ground undug during winter, or planted in autumn, or if taken up and not planted in autumn, they must be thoroughly greened and packed in sand. And we are to comfort ourselves with the belief that these means are sufficient to restore the potato to its primitive vigor, and that it is nonsense to think of troubling ourselves by raising new varieties from seed.

Can it be considered probable, that this method of renovating the health of aged or diseased varieties of the potato, should have escaped the attention of Mr. Knight. He knew well the pernicious effects on the progeny of over-feeding our domestic cattle, with a view

* 1834, p. 340.

to premiums, as one of my letters from him testifies, and doubtless no man was better aware of the injurious effects of an excess of food and other influences on plants. Then consider the attention which he obviously paid to the culture of the potato, the unusual care and diligence with which he conducted all his inquiries, and the anxious desire he ever manifested to arrive at the truth, by repeatedly trying experiments from which he suspected results unfavorable to the conclusions at which he had arrived. The object, moreover, which he constantly had in view, was utility. To be useful to his country and fellow men, by discovering important truths in cultivation, was the aim of all his inquiries. Yet, with such qualifications as these, and when near the close of his invaluable labors, and after fifty years, at least, of experiments and observations on plants, Mr. KNIGHT said, "I have, in several instances, tried to renovate the vigor of old and excellent nearly expended varieties of the potato, *by change of soil and mode of culture*, but I never in any degree, succeeded; all became unproductive and worthless." Yet, notwithstanding, Mr. KNIGHT, with his profound knowledge of the laws of vegetable life, and his great skill as a cultivator, was foiled in his repeated endeavors to re-invigorate old varieties of the potato; the peasantry of England were seriously told, that to think of renovating the potato crop, by raising new varieties from seed, was a dream, and that if they would only adopt certain methods, they might restore old varieties to health and vigor, and so continue them healthy and vigorous forever.

The failure of Mr. KNIGHT and others, to restore old varieties of the potato to health, is not the only ground for doubting the efficacy of the means recommended by Dr. LINDLEY. If the feebleness of the constitution, or the wearing out of varieties were a consequence chiefly of their being grown in too rich land, or frequently repeated on the same land, surely garden varieties should have been short lived, and most subject to disease, for gardens generally are much more highly manured than fields, and there the crop is most frequently repeated. But early varieties seem upon the whole, to have been more free from disease than late, or field varieties, and I am inclined to believe that as a general rule, they continue in a healthy and useful condition for a much greater length of time, owing to the non-production of blossoms and seeds. These do not, moreover, have the same high farming in other countries as in England, of late years; and in England, what may be called high farming, is even now the exception, and not the rule. Much of the arable land in the first settled parts of the United States, is well known to have been considerably exhausted by taking repeated white crops, without making any adequate return to the soil, in the shape of manure, yet the blight of the potato has been fully as virulent in the United States as in England. In this section of the country, the potato has been grown on land first broken up two or three years ago, and to which, in many instances, no manure has been applied, but the crops are blighted, our plants are now nearly destitute of foliage, and in many cases a very considerable proportion of the tubers has already decayed.

Varieties of the ranunculus and anemone, which are propagated by their tubers, are also exempt from many of the causes which Dr. LINDLEY says must be avoided in the future cultivation of the potato, with a view to restore it to health. The tubers of these plants are not gathered into heaps, and suffered to heat during winter; they are not allowed to grow before planting in spring; consequently no useless sprouts are rubbed off; they are not planted on raw manure, nor are they cut into sets; therefore there is no loss of sap, or danger of injury from external causes arising from that practice. Yet, notwithstanding these disadvantages, and notwithstanding the care and skill bestowed upon them by the ardent florists, varieties of these plants unquestionably degenerate and wear out.

One of the first authorities on the ranunculus, the Rev. Mr. TYSO, a gentleman who has raised thousands of this beautiful flower from seeds, observes that "the longevity of the ranunculus has been variously stated. Some of the finest seedlings are weak, and therefore die in a few years, though for a time they had great renown; others of first rate character, are remarkably strong, and increase abundantly. A variety may be perpetuated about a century. Many of the varieties standing high in the esteem of florists forty years ago, are fast declining in numbers and energy; they now blossom less frequently, or produce smaller blossoms. Seedlings possess all the luxuriance and vigor of youth, and produce larger and finer blossoms than the old varieties."* Similar observations might be quoted from papers in the Gardener's Chronicle, by Dr. HORNER, Mr. R. LYMBURN, and other cultivators of this flower.

Another high authority in these matters, minutely describes the effects of age on varieties of the anemone. "The constitution of anemones," says Mr. MADDOCK,† undergoes considerable changes with age, which is, perhaps, in a greater or smaller degree, the case with all other vegetables. The anemone will not last over twelve or fifteen years without degenerating, unless it be frequently removed to a different soil and situation; nor will any removals protract or prolong its existence more than thirty or forty years. It generally blooms in the greatest perfection from the fifth to the tenth or twelfth year, after which it gradually becomes smaller and weaker, and if the flower was originally full and double, with age it loses that property; the petals diminish in number, become small and irregular and finally, the sort perishes. It has more than once occurred, that the same variety, although in the possession of many persons residing at remote distances from each other, has been entirely lost in one season, without the possibility of accounting for it in any other manner than the above."

Mr. KNIGHT'S hypothesis seems indeed to be based on such numerous indisputable facts, the results of repeated experiments and observations by himself and other practical men, that I could scarcely have believed any serious objection would be urged against it at the present day, by any man whose opinion is entitled to respect. LOUDON, who was so decidedly opposed to it at one time, very nearly coincided with Mr. KNIGHT'S views lately, as your extract from the Suburban Horticulturist indicates. In the life of Mr. KNIGHT, prefixed to the published collection of his Phys. and Hort. papers, it is said: "Mr. KNIGHT'S hypothesis was so contrary to generally received opinions, that it at first met with considerable opposition; but the increasing decay of the old fruits, even when grafted on the most vigorous stocks, and the superior healthiness of the new varieties produced from seed, has caused Mr. KNIGHT'S theory to be almost universally adopted."

Dr. LINDLEY has indeed himself placed on record the most decided opinion in favor of this hypothesis,—that there is some analogy between vegetable and animal life; that varieties of plants do become feeble and less productive as they become old. In an article in the Gardener's Chronicle of the 6th of September, 1845, he said, "raising seedling potatoes is a practice upon the importance of which we have frequently insisted. All old varieties of those cultivated plants which are propagated by division of the stem and not by seeds, seem to decline as they grow old, there being some analogy in this respect between plants and animals." In the Gardener's Chronicle of March 1, 1845, Dr. LINDLEY, in an article on the potato said—"finally let us point to the *immense importance* (the italics are his own) of renewing the vigor of potatoes by raising new varieties from seeds; this has been tried over and over again, and always with some advantage; sometimes with a great deal. It is certain that the productive quality of a given variety of the potato is in

* Gard. Chron., June 22, 1844, and Tyso's Pamph. on the Ranunculus.—† Maddock's Florist's Directory.

proportion to its youth, and that all varieties cease, after a few years, to be as productive as they once were. When Mr. KNIGHT'S seedlings were originally tried, they yielded in one case at the rate of 68 and 70 for one; no such crops can now be obtained from them."

In the fall of that year, 1845, the blight of the potato was first extensively developed in England, and Dr. LINDLEY with two eminent chemists were appointed on a commission by the government of the late Sir ROBERT PEEL, to inquire into the cause and suggest a remedy. Considering that I had good reasons to be disatisfied with their explanation, and that a more truthful view of the whole cause had occurred to me, I sent three letters to the London Morning Herald, stating my views as to the nature of the malady, and showing that the commissioners were in error in concluding that the disease was of a temporary character; that their explanation was not adequate to account for it, and that their remedial measures alone could not possibly prove efficient.

I need hardly say that time has abundantly proved my objections were well founded. In the article on the 20th of Dec., 1845, Dr. LINDLEY, when objecting to my notions in the matter said, "we regard the notion that the races (varieties) of plants wear out, as utterly baseless and visionary. The health of the potato is not, with any certainty, to be increased by raising new varieties from seeds. The idea of renovating the potato crops of Europe by raising new varieties from seed is a dream. We advise growers not to indulge in a vain hope that seedling varieties will be any better than what they now have." May I not well ask, if in March and September, it was *certain* that in the course of time the produce of varieties diminishes, and they become feeble as they grow old, what had occurred since; what new light had there been thrown on the subject, that these opinions should in December be denounced as "utterly baseless and visionary?" If in March and September, renewing the vigor of potatoes by raising new varieties from seeds, was a point of *immense importance*, a practice always attended with some advantage, why in December should the idea of renovating the health of the potato crop by raising a succession of new varieties from seed be pronounced a dream, and the hope that seedlings would be any better than those we now have be dismissed as vain?

Respectfully yours, JOHN TOWNLEY.

Moundville, Marquette county, Wis.

We commend Mr. TOWNLEY'S article—certainly one of the most interesting we have published in this Journal—to the perusal of our readers. ED.

PARLOR-FLOWERS IN WINTER.

BY H. W. BEECHER.

THE treatment of house-plants is very little understood, although the practice of keeping shrubs and flowers during the winter, is almost universal. It is important that the physiological principles on which success depends, should be fairly understood, and then cultivators can apply them with success in all the varying circumstances in which they may be called to act.

Two objects are proposed in taking plants into the house,—either simple protection, or the development of their foliage and flowers during the winter. The same treatment will not do for both objects. Indeed the greatest number of persons of our acquaintance, treat their winter plants, from which they desire flowers, as if they only wished to preserve

them till spring; and the consequence is, that they have very little enjoyment in their favorites.

Treatment of House-plants designed simply to Stand Over.—Tender roses, Azaleas, Cape Jessamines, Crape Myrtles, Oranges, Lemons, Figs, Oleanders, may be kept in a *light* cellar if frost never penetrates it.

If kept in parlors, the following are the most essential points to be observed. The thermometer should never be permitted to rise above 60° or 65°; nor at night to sink below 40°. Although plants will not be frost-bitten until the mercury falls to 32°, yet the chill of a temperature below 40° will often be as mischievous to tender plants, as frost itself. Excessive heat, particularly a dry stove heat, will destroy the leaves almost as certainly as frost. We have seen plants languishing in a temperature of 70°, [it often rising ten degrees higher,] while the owners wondered what could ail the plants, for they were sure that they kept the room warm enough!

Next, great care should be taken not to over-water. Plants which are not growing, require *very little* water. If given, the roots become sogged, or rotten, and the whole plant is enfeebled. Water should never be suffered to stand in the saucers; nor be given, always, when the top soil is dry. Let the earth be stirred, and when the *interior* of the ball is becoming dry, give it a *copious* supply, let it drain through thoroughly, and then turn off what falls into the saucer.

Plants designed for Winter-Flowering.—It is to be remembered that winter is naturally the season of *rest* for plants. All plants require to lie dormant during some portion of the year. You cannot cheat them out of it. If they are pushed the whole year, they become exhausted and worthless. Here lies the most common error of plant-keepers. If you mean to have roses, blooming geraniums, &c., in winter, you must, *artificially, change their season of rest.* Plants which flower in summer must rest in winter; those which are to flower in winter, must rest either in summer or autumn. It is not, usually, worth while to take into the house for flowering purposes, any shrub which has been in full bloom during the summer or autumn. Select and pot the wished for flowers during summer; place them in a shaded position facing the north, give them very little water, and then keep them quiet. Their energies will thus be saved for winter. When taken into the house, the four essential points of attention are light, moisture, temperature, and cleanliness.

1. *Light.* The functions of the leaves cannot be healthfully carried on without light. If there be too little, the sap is imperfectly elaborated, and returns from the leaves to the body in a crude, undigested state. The growth will be coarse, watery, and brittle; and that ripeness which must precede flowers and fruit cannot be attained. The sprawling, spindling, white-colored, long-jointed, plants, of which some persons are unwisely proud, are, often, the result of too little light and too much water. The pots should be turned around every day, unless when the light strikes down from above, or from windows on each side; otherwise, they will grow out of shape by bending toward the light.

2. *Moisture.* Different species of plants require different quantities of water. What are termed *aquatics*, of which the Calla Æthiopica, is a specimen, require great abundance of it. Yet it should be often *changed* even in the case of aquatics. But roses, geraniums, &c., and the common house plants require the soil to be *moist*, rather than *wet*. As a general rule it may be said that every pot should have one-sixth part of its depth filled with coarse pebbles, as a drainage, before the plants are potted. This gives all superfluous moisture a free passage out. Plants should be watered by *examination* and not by *time*. They require various quantities of moisture, according to their activity, and the

period of their growth. Let the earth be well stirred, and if it is becoming dry on the inside, give water. Never water by *dribblets*—a spoonful to-day, another to-morrow. In this way the outside will become bound, and the inside remain dry. Give a copious watering, so that the whole ball shall be soaked; then let it drain off, and that which comes into the saucer be poured off. But, in whatever way one prefers to give water, the thing to be gained is, a full supply of moisture to every part of the roots, and yet not so much as to have it *stand* about them. Manure-water may be employed with great benefit every second or third watering. For this purpose we have never found anything equal in value to *guano*. Besides water to the root, plants are almost as much benefitted by water on the leaf—but of this we shall speak under the head of *cleanliness*.

3. *Temperature*. Sudden and violent *changes* of temperature are almost as trying to plants as to animals and men. At the same time, a moderate change of temperature is very desirable. Thus, in nature, there is a marked and uniform variation at night from the temperature of the day. At night, the room should be gradually lowered in temperature to from 45° to 50°; while through the day it ranges from 55° to 70°. Too much, and too sudden heat will destroy tender leaves almost as surely as frost. It should also be remembered that the leaves of plants are constantly exhaling moisture during the day. If in too warm an atmosphere, or in one which is too dry, this perspiration becomes excessive and weakens the plant. If the room be stove-heated, a basin of water should be put on the stove to supply moisture to the air by evaporation. Sprinkling the leaves, a kind of artificial dew, is also beneficial, on this account. The air should be changed as often as possible. Every warm and sunny day should be improved to let in fresh air upon these vegetable breathers.

4. *Cleanliness*. This is an important element of health as well as of beauty. *Animal uncleanliness* is first to be removed. If ground-worms have been incorporated with the dirt, give a dose or two of lime-water to the soil. Next aphides or green-lice will appear upon the leaves and stems. Tobacco smoke will soon stupefy them and cause them to tumble upon the shelves or surface of the soil, whence they are to be carefully brushed, or crushed. If one has but a few plants, put them in a group upon the floor; put four chairs around them and cover with an old blanket, forming a sort of tent. Set a dish of coals within, and throw on a handful of tobacco leaves. Fifteen minutes smoking will destroy any decent aphis.

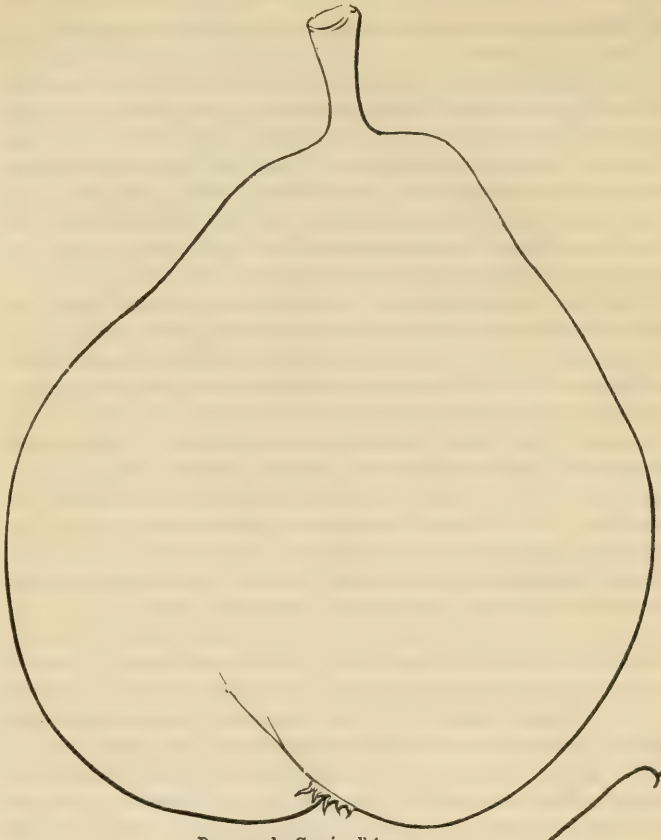
If a larger collection is on hand, let the dish or dishes be placed under the stands. When the destruction is completed, let the parlor be well ventilated, unless, fair lady, you have an inveterate smoker for a husband; in which case you may have become used to the nuisance. The insects which infest large collections in green-houses, are fully treated of in horticultural books of directions.

Dust will settle every day upon the leaves, and choke up the perspiring pores. The leaves should be kept free by gentle wiping, or by washing. H. W. B.

DESCRIPTION OF THREE NEW PEARS.

BY ANDRE LEROY, ANGERS, FRANCE.

We have had the pleasure of receiving from Monsieur Le Roy, of Angers, the following descriptions of valuable new fruits, which we take pleasure in presenting to our readers. M. Le Roy enjoys a well earned reputation as one of the most distinguished French cultivators; his nurseries, the finest in France—covering over an hundred acres, are favor-

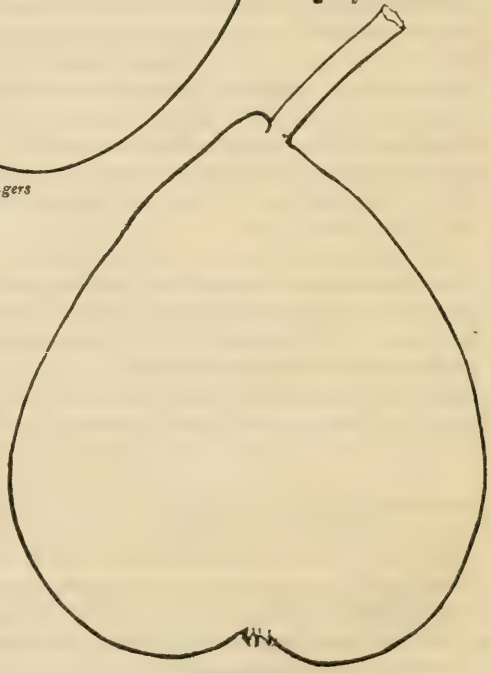


Doyenne du Cornice d'Angers

ably known in the United States. They embrace, among other things, a "School of Pears," where all varieties of merit are tested before being propagated in the nurseries—a feature which is now being adopted to a considerable extent in this country.

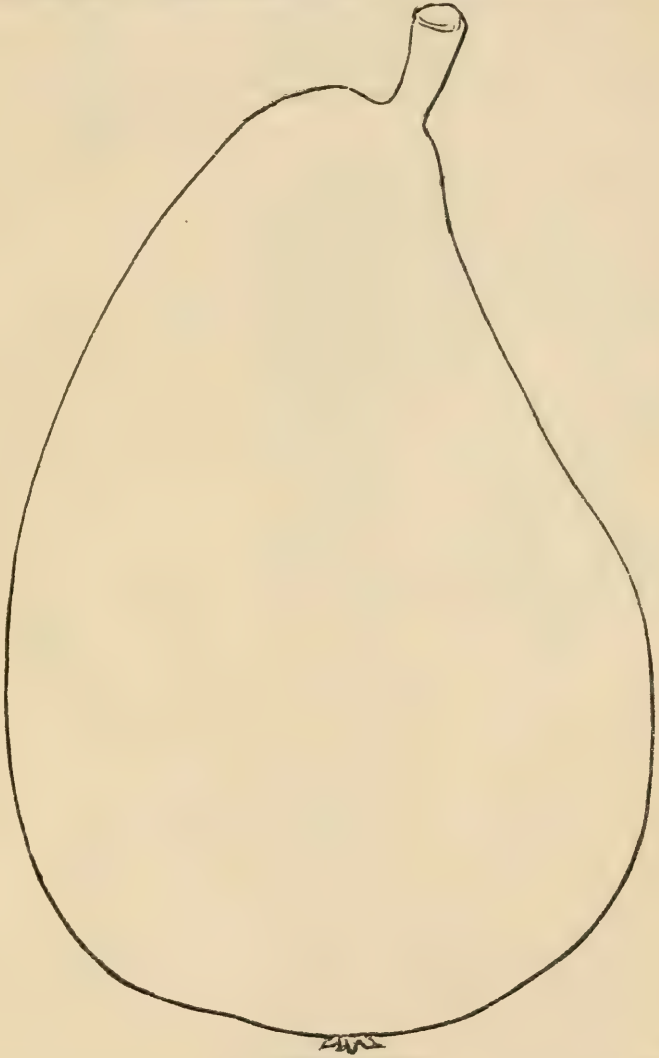
I. Doyenne du Cornice d'Angers. — Tree — vigorous, pyramidal shaped, productive; fruit—very large, regularly turbinate; skin—greenish yellow, speckled with russet dots; flesh–melting, buttery, juicy, sugary, agreeably perfumed; very delicious; ripens in November and December; raised from seed in the garden of the Horticultural Society at Angers.

II. Wiedow Pear.—The trees of this variety are of medium growth, pyramidal shaped, straight branched the wood is short stout; very productive; fruit—of medium size, regularly turbinate; the stem is slender, and obliquely inserted at the surface; color—yellowish green, covered over about half of the surface with dark gray spots, grayer on the sunny side. It resembles the color of Beurre d'Angleterre; skin—thin; flesh — white, very melting, buttery; juice—abundant, slightly acidulous or



Wiedow Pear.

vinous in flavor; agreeably perfumed and highly flavored. It is a delicious, first rate pear, and I do not know another equally good at this season, where we have so many kinds in ripening,—end of September and October. I do not know its origin.



Beurre Clairgeau of Nantes.

III. Beurre Clairgeau, (of Nantes.)—A very large fruit, irregularly turbinated; skin—yellow greenish, with dark spots; flesh—melting, buttery, juicy; resembles the Gray Doyenne; ripens in October and November. A vigorous tree; very productive, and forming fine pyramids. It is a handsome pear of first rate quality, raised from seed by Mr. Clairgeau, at Nantes, (France,) and put in trade by the care of the Horticultural Society of this city. Yours very respectfully, Andre Le Roy.

Angers, France, 1st Sept., 1851.

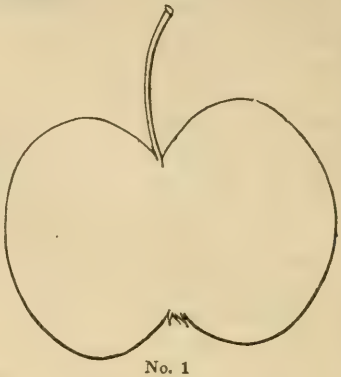
DESCRIPTION OF ORNAMENTAL CRABS AND APPLES.

BY B. DESPORTES, ANGERS, FRANCE.

Mr. DOWNING—I take the liberty to forward you the following descriptions of our collections of apples for ornament. I beg you to give a place in your Journal to them, if you think them acceptable. I am very respectfully,

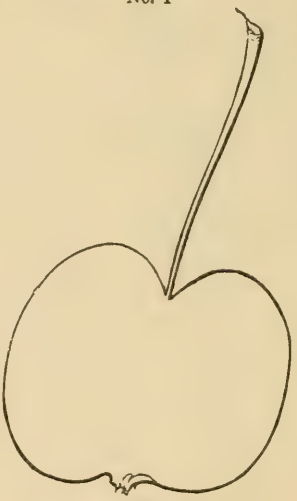
B. DESPORTES.

Among the numerous collections of ornamental trees and shrubs of any sort, that Mr. ANDRE LEROY cultivates in his large nurseries, there is a genus that we have not met with any where else so complete. It is this of the ornamental apples, including the series of Baccata, [Siberian Crabs.] All the following kinds are not eatable, except the Siberian Crabs, which are very suitable to make good preserves, but we use them more generally in the ornamental plantations of the parks and pleasure grounds. They are so productive that the fruits touch each other on the branches; their brilliant color makes them of the most ornamental objects. The fruit hangs upon the tree a very long time, and does not fall till after the frosts in November. We use the fruits very agreeably to decorate a desert table.



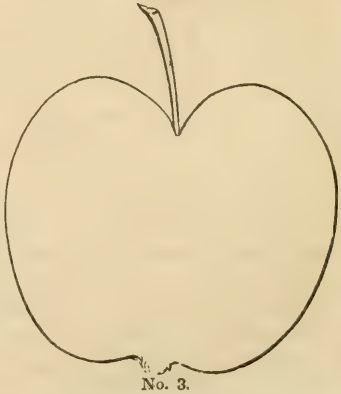
No. 1

No. 1. THE PURPLE SIBERIAN CRAB—*Baccata fructa purpurea* or *rosea.* Fruit, about one inch high, and one and a half broad, oblate towards the two extremities, roundish on the other side; stem, two-thirds of an inch long, slight slender, curvate, inserted within a profound cavity; color, beautiful reddish purple on the sunny side, covered with fine white flower like that of the plums, the shaded side is less brilliant, and all the surface is speckled with same gray dots; flesh, is like all the crabs, coarse and acerb.



No. 2.

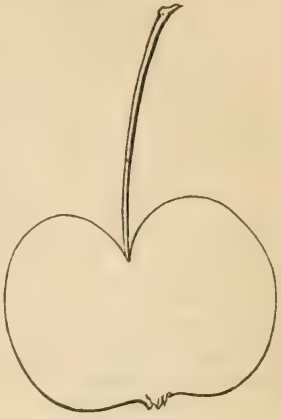
No. 2. LARGE SIBERIAN CRAB—*Baccata macrocarpa.* Fruit, about one inch long and a little more in diameter, compressed towards the eye, roundish towards the stem; this is one and a half inches long, slender, almost right, covered with asperities towards the upper part. It is inserted within a narrow and deep cavity; eye small, closed outside of the surface, inserted upon some small wrinkles reunited together; color, rose violet on the sunny side, covered with a white bloom, and green on the shaded side.



No. 3.

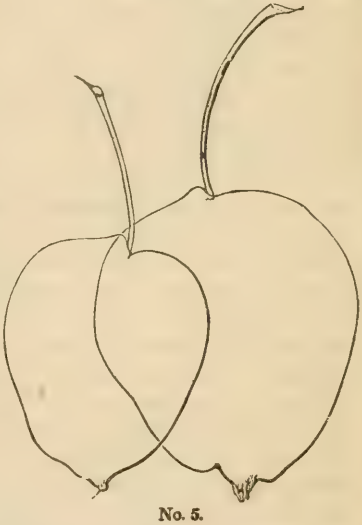
No. 3. STRIPED SIBERIAN CRAB—*Baccata fructa*

striata. Fruit, one-third of an inch high and one and a half inch in diameter; form, roundish oblate towards the eye, round towards the stalk; this is half an inch long, large at the upper end, obliquely inserted in a profound cavity; eye, small, closed; segments of the calyx united in a bundle; color, rose yellowish, red striped every where, carmine on the sunny side, more yellow towards the stem; covered with a fine white bloom. This is an extremely ornamental tree.



No. 4.

No. 4. Rouen Transparent Siberian Crab—*Baccata transparent de Rouen*. Fruit, about one inch high and one-third of an inch in diameter; form, oblate, compressed towards the eye, round towards the stalk, irregular; stem, slender, sometimes very long, ordinarily one and a half inches, curved obliquely, inserted in a deep but very wide cavity; calyx, small, inserted at the surface, between several small wrinkles; color, red carmine everywhere, except in the place wholly covered by shade, then the color is yellowish, covered upon all the surface with a white fine bloom, which makes it very beautiful and transparent.

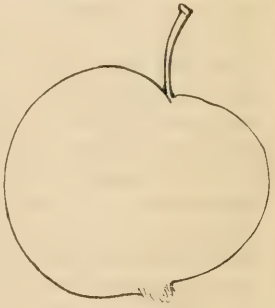


No. 5.

No. 5. Oblong Siberian Crab—*Baccata fructa oblonga*. Fruit, one and a half inches high, and a little more than an inch in diameter; form, oblong or ovoid, irregular; a lip surmounts the insertion of a side of the stem, and another the eye; the stalk is long, slender, curved, larger at the upper part; calyx, small and almost wholly covered by the lip, and crowded by small wrinkles; color, red crimson everywhere, speckled with small gray dots; the time of ripening is earlier than for the other kind; this time arrives generally about the end of September. The figure shows two specicimens of different size, of the same kind.

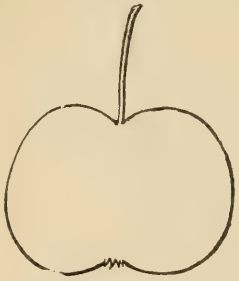
No. 6. The Double White Siberian Crab—*Flore pleno alba*. Fruit, three-fourths of an inch high, and one and a quarter inches in diameter; form, compressed, round, irregular, more swollen on one side than the other; stalk, one-third of an inch long, larger at the upper extremity, obliquely inserted at the surface; eye, large, even with the surface, closed; color, red carmine on the sunny side, green on the shaded side, covered with white bloom.

This kind is worthy of notice, not only by the fruits but by the flowers, which are large, double white rosy. It is a brilliant and very ornamental crab.



No. 6.

No. 7. The Fragrant Flowered Siberian Crab.—*Odorata*. Fruit, small, about three-fourths of an inch high



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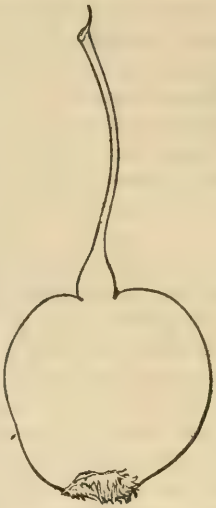

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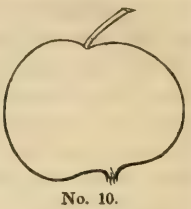


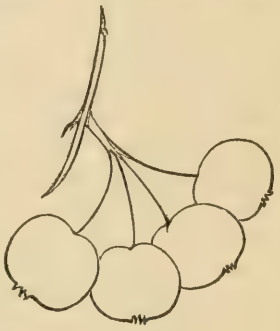
No. 10.

No. 11.

and one inch broad; form, compressed at the two extremities, rounder towards the stem than the eye; stalk, half an inch long, slender, right, inserted in a shallow cavity, but very open; eye, small, set in a cavity formed with small wrinkles; color, green everywhere, speckled with gray whitish dots. The flower is very fragrant; the odor is the same as that of the violet.

No. 8. Cherry Apple—Fruit, one inch high, three-fourths of an inch in diameter; form, ovoid, cordiform towards the stem, conic towards the eye; this is terminated by a small stalk, long, slender, curved; eye, large, projecting out of the surface, formed with a bundle of small wrinkles, crowded by segments of calyx; color, yellowish lemon uniformly, nevertheless a little spotted with red on the sunny side.

No. 9. The Showy Crab—*Spectabilis*. Fruit, about three-fourths of an inch high, and three-fourths of an inch in diameter; form, very irregular, almost square; stalk, three and a half inches long, larger at the upper part, large, fleshy at the base, inserted at the surface and crowded by wrinkles; eye or calyx, very broad, large profound segments, numerous and out the surface; the cavity is formed by small wrinkles, irregular; yellow color, slightly spotted with rose on the sunny side, speckled with white dots upon the surface.



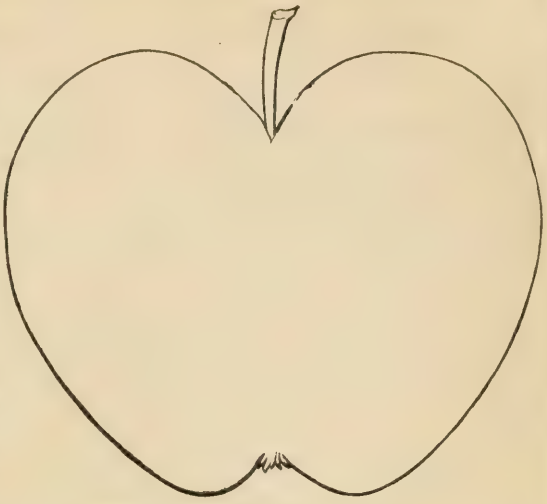
No. 12.

No. 10. Astracan, or Evergreen Apple Crab.—Fruit, two-thirds of an inch high, and three-fourths of an inch broad; form, oblate, compressed, irregular; stalk, short, one-third of an inch long, obliquely inserted in a shallow cavity, crowded on one side by a lip; eye, broad, formed by several small wrinkles out the surface; segments, long; color, deep green, speckled with white dots. The leaves are evergreen, and remains on the tree during the winter.

No. 11. The Double Flowering Crab.—Fruit, two-thirds of an inch high, and three-fourths of an inch in diameter; form, roundish, but very irregular; stalk, one inch long, larger at the two extremities; eye, very large, out the surface, formed with five small wrinkles united together, and terminated in a bundle by the segments of the calyx; color, rose violaceous on the sunny side, ashy green on the shaded side, covered with a white

flour on the rose color. It is very ornamental by its double white flowers in the spring.

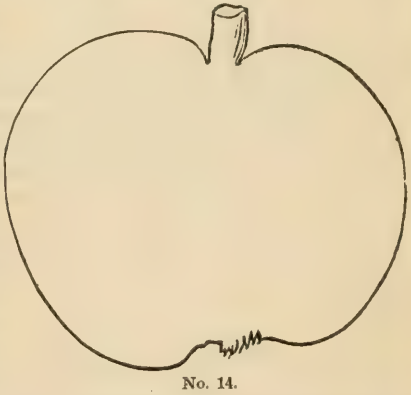
No. 12. The Currant Crab —*Pomme groseille.* The fruits of this kind of apple are of the size of the currants, and are borne like them, in clusters. They are round, a little compressed towards the two ends; the stem is about half an inch long; the eye is large; red colored, slightly striped with deep red; it is ornamental in its flowers as well as its fruits.



No. 13.

I can add to the above list some other kinds, which are not less ornamental as trees of decoration in the pleasure-ground, and as desert fruits; nevertheless, they take place generally among the eatable fruits.

No. 13. Transparent de Zurich Apple. —Fruit of two inches high, and two and a half inches in diameter; form, obovate, larger towards the stem, and narrower towards the eye; stalk, slender, half an inch long, curved, inserted in a profound cavity; eye, compressed, closed, set in a wrinkled cavity; color, white, like the wax, of which this apple has the appearance, and the brilliant coloring, without the smallest spot; skin, very fine; flesh, white, like the snow, and not different from the skin; dry, acidulous; it is only of third rate, but I do not know another, a more pretty or more ornamental desert apple. It ripens in September and October.



No. 14.

No. 14. Black Lady Apple.—Fruit, one and one-third inches high, and one and three-fourth inches in diameter; form, roundish, irregular; stalk, short, inserted in a shallow cavity; eye, small, closed, set in a profound cavity; color, deep black everywhere, speckled with some gray dots towards the stem; flesh, tender, breaking, acidulous, first rate; ripens from November to March. It is very curious, and very suitable as a desert fruit.

I am very respectfully,

B. Desportes.

Angers, France, September 21, 1851.

STRAWBERRY HILL—A LESSON IN TASTE.

[SEE FRONTISPIECE.]

One of the most celebrated men of the last century, as every one familiar with English literature knows, was Horace Walpole. His literary talent, his love of art, his antiquarian taste, and his social position, all combined to make him one of the celebrities of his age. All reviewers admit that his letters convey the best *interior* picture of his time, that we possess, and they have a charm of style, and a flow of anecdote and wit, that have made them the most popular books of their kind for nearly a century.

When Walpole was in his prime, he retired to Twickenham, on the Thames, one of the suburbs of London. Here he purchased a property, and amused himself for twenty years in building a villa, which he called Strawberry Hill, and collecting a museum of antiquarian relics, and curiosities of all kinds. In this residence and its contents he spent vast sums of money, and exhausted all his taste and ingenuity in producing something unique and admirable. Having already ransacked Italy as a virtuosa, before commencing his buildlng he made a tour through various parts of the kingdom, and collected models of the principal cathedrals and fine old gothic buildings. England had been saturated for two generations previous to his time, with so-called classical architecture, and Walpole, with his antiquarian taste, set about a revival of the taste for the ancient style.

The result in Strawberry Hill, is both amusing and instructive. It is amusing, since the house was at last only a caricature of gothic style—a kind of bastard imitation, or rather jumble of various eras of gothic architecture, without unity, harmony, or correctness of detail or proportion. Square headed labels are hung over pointed windows, pinnacles spring out of embattled parapets—and every species of absurdity of which the style is capable, seem to be assembled to keep each other company.

Strawberry Hill is instructive, because it shows very clearly that a man may have a great deal of knowledge, and abundant taste of a certain kind, and yet make an utter failure in attempting to become his own architect. If a man wishes to build a plain house—which shall express only a comfortable and convenient family residence, he may succeed well enough without any professional aid. But it is easier to compose a fine piece of music without having studied harmony and thorough basso, than it is to compose a large building, in a complicated style of architecture, without knowing a great deal more of the art than what is comprised in a mere love of the subject, and a smattering of knowledge of the details and plans of other buildings.

Strawberry Hill has been looked upon with favor by some critics, not as possessing intrinsic beauty, but as having drawn attention to the merits of the Gothic style, which had long been neglected in England. A writer in the London Quarterly, claims even more for Walpole. "He will probably be for ages remembered as the creator of a new style of architecture. Great discoveries are sometimes made from small circumstances, and the repairs and additions made to what was originally a little citizen's box at the corner of two high roads, revealed to Walpole the great secret of the combined beauty, convenience and grandeur, which a revival of our old English architecture was capable of producing. He honestly confesses that when he began to gothicise Strawberry Hill, he knew little about the principles of the style he adopted—all his earlier, and some of his later details, were poor, erroneous and inconsistent, and the whole, even after the author had finished it to his own mind, has been censured as a heap of littlenesses and incongruities. The description is just, but the censure is not so."

Another English writer gives the following description of Strawberry Hill, which accords entirely with our own impressions:

"A place more intrinsically paltry does not exist: dirty, dingy walls, rough coated with mortar and pebbles, and surmounted by *wooden* battlements, of which the founder himself outlasted three generations; bounded on two sides by the high road, with all its dust, noise and publicity; the rooms low, dark, and with the exception of the long gallery, devoid of proportion; the grounds limited to a very small space, and that limitation rendered still more conspicuous from the attempt to crowd into it temples, grottoes, and statuary; the only merit of Strawberry Hill is one with which HORACE WALPOLE had nothing to do, namely—the view of the river commanded by this piece of architectural gimcrackery.

"WALPOLE seemed altogether to forget, in what he chose to consider his restoration of the pure gothic, that the essential character of that style is grandeur and sublimity; and that without space and magnitude, all examples of castellated gothic, must be contemptible. The classic styles admit of being applied to buildings, either great or small; and seem to equal advantage in the Temple of Minerva or the Lanthorn of Demosthenes. But to the gothic, [where one goes beyond a mere cottage,] breadth and altitude are essential; and the attempt to illustrate its character and beauties in lath and plaster, at Strawberry Hill, has produced only a very ugly, fragile, and incommodious structure, destitute either of beauty or sublimity."

We have held up Strawberry Hill to public notice, because we have seen one or two instances of this kind of *virtuoso* amateur compilation on this side of the Atlantic. We could name one example, at least, where over one hundred thousand dollars have been spent in a private residence, in a miserable battlemented gothic style, most solidly and well built of brown sandstone—but hardly less tolerable in point of design, than Strawberry Hill. The owner was his own architect, disdaining all professional assistance, and with the aid of a few books on gothic architecture, and a good builder, has *hashed* up a building that he will most likely live to be ashamed of, as his friends now are, when he might have set a noble example of pure taste to aid the architectural genius of a young people.

MELONS AND THEIR CULTURE.

BY A. GERALD HULL, NEWBURGH, N. Y.

MUSKMELONS.—The rather flattering success which has attended my plantation of melons, contrasted with the failure of many neighbors, especially during the past season of unusual drouth, has elicited inquiries as to the *method;* to which I cheerfully respond, deferentially desirous of contributing even a mite to the rich treasury of modern horticulture. The *originality* mainly consists in *borrowing* hints and facts from every available source prior to experiment, in which many experienced cultivators will detect familiar features; so that the *method* in publishing phraseology, may be described as "a new edition, compiled from the best authorities, with emendations and suited to the requirements of the locality." It may be pertinent to state that the culture was in the open air, or exclusive of green-houses, frames or other mechanical expedients for forcing, insect protection, &c.

Planting.—Seeds, one and two years old, were planted dry, there being apparently no

difference in the size or quality of the melon on account of age of seeds. Firm, inverted sods, five inches square and two and three inches thick, were laid side and side over a well prepared hot-bed and two seeds were inserted into each piece. The whole plane of these inverted sods was dusted over with rich mould, which filled the interstices, and furnished an uniform surface to the seeds. Another season fine charcoal dust will be substituted. The advantages of the sod planting consist—in the selection of a southern and early germinating exposure by barn or wall; in affording ample time during the germination of the seed to prepare permanent beds; and in the specific quality of the turf in which the melon delights.

Beds.—The permanent beds or hills in the open ground were thus prepared, at intervals of six feet from their centres. Circular holes were dug out of trenched ground to the depth of twenty inches and two feet, with diameters varying from two to four feet. No special advantage was gained from the larger diameters. The lower halves of the holes were filled with equal parts of clay loam and *fresh* manure; the upper halves with the same loam and *old* manure. A compost was then formed of equal thirds of *poudretted muck*, (a barrel of Lodi poudrette thoroughly incorporated with a cord of muck)—*sand* and *virgin earth* or decomposed turf. This was spread above the filled holes forming hills, about five inches high with diameters of four feet. In previous years *ripe-manure* was applied instead of *poudrette*, with less satisfactory results.

Transplanting.—When the cotyledon, or two earliest leaves, of the seeds were fully developed, the sods were moved to their beds. Each sod was lifted with care, a broad trowel or sharp thin spade being the most efficient means for this purpose. The objections urged against this process, because of the sensitiveness of the plants when disturbed, need not obtain in a single instance if the sods be thick and firm and be not wantonly handled. Four sods were placed in each hill, about twelve or fourteen inches apart, forming the corners of a square, thus affording room for the free extension of the vines. If two plants were growing in a sod, as soon as the vigor of the major plant was determined, the weaker one was destroyed, allowing four vines to the hill.

Mulch.—Long litter has been my favorite mulch for years. This was freely applied until it filled the intervals between the hills quite close to the plants. The *moisture* of the earth was thus preserved, and, after a few rains, a clean, bleached surface of straw was furnished for the maturing melons. Foreign gardeners prefer flat stones to the bleached straw, and in nursing large specimens for exhibition or seed they will answer. This question evoked the following experiment. Two hills were carefully prepared, and planted with equal numbers of a hybrid of green Hosainee and Borneo melons. The one was mulched with long manure; the other was paved with stones. Both plantations, from their exposed situation, suffered from parching drouth. The long litter gained the preference.

In-heading.—I have followed the practice, which has obtained with careful growers, of pinching off the first blossom buds, which undoubtedly adds to the increase of lateral shoots, the vigor of the whole plant, and the size of the fruit.

Bugs.—Who can enumerate the expedients advised to extirpate these venomous pests! Snuff, tobacco water, soot, guano, lime, ashes, and the like have been essayed, and succeeded for the most part only when their too acrid form destroyed the plants! The *cucumber flea-beetle* (*Haltica pubescens*,) a hopping little black demon, generally infests the plants on the maturing of the cotyledon. I have temporarily succeeded in debarring the insects of this class from their plunder, by placing around the plants a cordon or circle of plaster of Paris well sprinkled with spirits of turpentine. The rapid evaporation of the turpentine, however, rendered its frequently required repetition too troublesome.

This annoyance induced me to profit by a hint, derived from the practice of Mrs. LOUDON, who expelled the aphides of her rose trees by a strong decoction of *quassia*. I directed four gallons of boiling water to be poured on four pounds of *quassia chips*, contained in a barrel. After twelve hours digestion the barrel was filled with cold water. This preparation, freely administered through a watering-pot, although it did not kill the black flea beetles, rendered the leaves quite unpalatable and every plant escaped harm from their attempted depredations. The *striped melon bug* (*Galereuca vittata*) usually follows the beetle. The application of the quassia water to the plants was continued, at the close of the day; and it was gratifying to find in it an immunity also from the assaults of the bugs of this kind. If the quassia water were omitted one or two days the return of these foes was injuriously manifest.

The most persisting enemy to the melon, devouring plants and fruit, is the *squash or pumpkin bug*, (*Coreus tristis.*) As long as the vines were damp with the quassi water, the bugs of this class made but trifling encroachments; soon as they were *dry*, they were again busy, disregarding the bitterness so much modified by evaporation. I then directed that a pound of common glue should be solved in water, and added to ten gallons of a quassi preparation of *double* strength. This glutinous liquid adhered to the plants, and molestation to both vines and fruit, thereafter ceased. The quassi water, in its strongest form, is perfectly harmless to nearly all vegetation, and especially of this tribe, which will allow the melon cultivator to increase its animal disturbing power to any degree consistent with economy. A plantation of Bermuda squashes was made on another part of the ground at some distance from the melons. The quassi water was *not* applied. The ravages of the pumpkin bugs were comparatively surprising. Mr. HOPE, the expert gardener of my neighbor, J. TUCKERMAN, Esq.,—had recourse also, to the quassi liquid, and attributes the injury and loss that occurred to some of his melons, to the omission of the same.

Another opponent to melon growers—the *white grub* or *cut-worm*—has never troubled me. Professor MAPES asserts, that *salt*, scattered around the plant, or incorporated with the soil, in the proportion of six bushels to the acre, will prove an effectual exterminator. Mr. SMITH, of Newport, in a former No. of this Journal, advises the covering of the beds with *charcoal powder*, for a protector.

Maturity.—Citron melon seeds were planted on the 3d of May; those of the Borneo, the 9th. They germinated within twelve hours of each other. The citron melons commenced to ripen freely about the 20th of August—104 days from planting. Mr. SMITH states, that his melons ripened in 112 days from planting, with his appliances of glass, brick squares, and milnet boxes. This allows an advantage to the open culture of six days.

Product.—The plot of ground occupied by the melons measured 40 by 180 feet. Sixteen hundred melons were produced. Wycoff's citron,* Borneo, and the true citron, were the varieties grown. The citron exceeded in sweetness and delicious flavor. The Borneo —a noble looking melon—which was excellent, attained the greatest size.

Specific inorganic manures.—For three consecutive years I have been experimenting with these manures, in regard to the *size*, *productiveness*, and *flavor* of melons.

1849. Exclusive of the humus, the upper stratum of the soil is a clay loam, the lower hard pan. The site selected was trenched three feet deep; the several strata were freely incorporated, and well rotted horse manure was freely distributed through the whole mass. Hills were raised six inches high, made light with fine sand, and distinguished, with one exception, by the following materials faithfully commingled.

* A cross between the nutmeg and citron.

Bed 1. *Superphosphate of lime and sulphate of potash.* 2. *Burned turf.* 3. *Muck,* neutralised by *potash.* 4. *Ashes.* 5. This bed was left without any mineral addition. They were mulched with long litter. The melons grown were nutmeg.

Note of 14th of September.—No. 1 exhibited the greatest *number of large* melons; 2 and 3 were the *earliest* to offer ripe fruit; 5 the latest; 2 produced melons grouped in beautiful clusters, more numerous for the space covered than the others; 3 and 4 gave *larger* samples than the others.

Note of 28th of September.—1. Superphosphate of lime and sulphate of potash. This plot has afforded the largest amount of melons of full size, and contains most at present, matured and maturing.

No. 2. Burned turf.—The clusters have been closer than either of the others; the total amount less than the one above.

No. 3. Muck neutralised by potash.—This plot has produced an amount of melons equal to No. 2; nearly all have been matured for some days, evidently exceeding all the others in this respect.

No. 4. Ashes.—This bed has exhibited the greatest number of very large melons; has not equaled No. 1 in productiveness.

No. 5. Soil without mineral manure.—The melons of this bed appear to be intermediate to No. 1 and 4 as to size; to No. 2 and 3 as to productiveness.

It would seem, therefore, that melons of No. 1 excelled in *size, quantity* and *lateness;* those of No. 3 in the *early maturing of the entire crop;* and those of No. 4 and 5 in the *size of select specimens;* in their productiveness, being inferior to No. 1 in number.

My own taste preferred the *flavor* of the melons grown in No. 1 and 3, where superphosphate of lime and sulphate of potash, and humate or gyate of potash, exercised their specific influence.

Specimens, however, corresponding with these beds and dates, were sent to my neighbor, Mr. DOWNING, and his practised judgment will be most satisfactory, touching the important question whether inorganic manures can modify the *flavor* of melons.

1850.—Holes were dug in two feet trenched ground, and hills formed similar to those of the present year, with this exception, that *old manure* was applied in place of *guano.* Beds were composed of—potash in muck—ashes in muck—burned turf—superphosphate of lime—superphosphate of lime and sulphate of potash—sulphate of soda in muck—salt and lime mixture, and poudrette.

The melons fed by humate of potash exceeded in *number, size* and *flavor;* those by poudrette equalled the previous in *number* and *size;* and those by superphosphate of lime, and lime and sulphate of potash, equalled the first in *flavor,* and approached the two previous in *size.*

1851.—The experiments were repeated the present year; but illness at the time most essential to an opinion, interfered with any accurate conclusions. My gardener, however, renders a decided preference to the product of the beds modified by the preparations of potash and superphosphate of lime.

Hybridizing.—The sensitiveness of the delicate Persian melons in the open air has interfered with their cultivation in this country. To *harden* and *acclimate* them, I made experiments of cross-breeding with our ordinary melons, during the last year, and with tolerable success. The flowers of Borneo were fertilized with the pollen of Green Hoosianee. Melons were produced of the precise form of the Green Hoosianee, with the color of the Borneo; their flesh possessing the fine fibre and tenderness of the Hoosianee, and in a partial degree, the flavor of the Borneo. The cross-breeding was extended to Polignac

and Borneo, and also to the French Cantaloupe, (*Melon galeuz,*) and Wycoff's citron. All the specimens gave positive evidence in their form and tissue, of their male parentage.

This year plants were raised from the seeds of the cross of Hoosiance and Borneo. The melons on my grounds possessed the form of the Borneo, and flesh of the Hoosianee, those on Mr. TUCKERMAN'S grounds, under the care of Mr. HOPE, exhibited the form of the Hoosiance—the whole produced from the seeds of the same melon. The extreme drouth of the season has interfered with trials for satisfactory conclusions, and another year will be required to determine as to the important quality of adaptation to our climate.

WATER MELONS.—These melons mature very freely in this locality, under *ordinary* culture, while the muskmelons, similarly treated, fail entirely. My plantations, however, have been subjected to the same discipline as the muskmelon, in every respect, with this exception, that the intervals from the center of the beds were increased from six to *ten* feet. The fruit has certainly possessed the finest flavor in the estimation of no indifferent tasters. The melons cultivated were "Imperial," "Florida," and "California;" the two latter I have so named to designate them.

The "Florida" was grown from seeds brought from Florida by Mr. SKALLY, my gardener of last year. It resembles the "Spanish," and probably is one of its varieties. The fruit is oblong, of medium size; skin deep green, striate with white marbling; flesh bright red, *solid*, very tender and delicious; seeds sparse and small, in different samples black, red or white. The largest specimen weighed 25 pounds.

The "California" seems to be another variety of the Spanish, sustaining an intermediate form between it and the Imperial. It was matured from seeds received from the "Auriferous tract" last year. A. G. H.

Newburgh, N. Y., Oct. 15, 1851.

The foregoing record of a careful course of experiments in melon culture—continued during three years—by our scientific neighbor Dr. HULL, will be read with much interest. It should be borne in mind by our readers, living on the warmer and lighter soils of New-Jersey and farther south, where fine melons are "grown with as little care, almost, as cabbages," that the soil about Newburgh is a strong clay loam—naturally by no means so favorable to the melon as the warm sandy loams of the former localities. It is therefore necessary to take far more pains to grow a fine crop of melons here, than in other and lighter soils.

As to Dr. HULL'S success, we frankly confess it surpassed all precedent here. We examined several times his melon patch, 40 by 180 feet, which produced the enormous number of *sixteen hundred melons*, and tasted the products, and are bound to say that we never saw so large a crop on so small a space, or tasted larger or finer melons. Looked at merely as a matter of profit, the outlay of preparation would be satisfactory—though of course much more was expended in the process of making the different experiments than would be needful to carry any one of the modes of manuring out, on a scale suited to general culture. The flavor was very distinct in the different beds—those in the beds of burnt turf being to our taste the most sugary and rich, while those with the superphosphate of lime were the most juicy and melting. ED.

ON RAISING NEW GRAPES BY HYBRIDIZING.

BY WM. CHORLTON, STATEN ISLAND.

DEAR SIR—I have been very much interested in reading over Dr VALK'S article in the Horticulturist for October, describing his success in hybridizing our hardy grapes with the exotic varieties. Too much praise cannot be given to that gentleman for his enterprising experiment, but it appears to me that he has gone the wrong way to work.

Physiological theory teaches, and practical experience proves to us, that the progeny of a plant, the flowers of which have been fertilized by another, is more likely to retain the constitution and habit of the mother, while any peculiarities as to flowers and fruit of the father, are introduced into the same body; consequently the Isabella should have been fertilized by the pollen of the Hamburgh, when an Isabella vine would most probably have been more the product, with an approach towards the fruit of Hamburgh. This appears to be proved by your own description of the fruit, and also Dr. VALK'S account of the appearance of the plant. So decided is the above fact, where proper care has been taken in the crossing, that the operator can predict tolerably closely, what the result will be. I do not pretend to deny that both fruit and plant will be somewhat changed by the same course which Dr. Valk has practiced, but we shall sooner and more surely come to the goal of our wishes, by acting in accordance with those laws which an all-wise Creator has so unerringly established. If we study nature she will bend most willingly to our purpose, and the progressive intellect of man may realise his most ambitious desires. It appears to me as settled as a demonstrated fact, that we can produce by perseverance in this course, a tribe of grapes quite equal in flavor to a Muscat or Frontignan, and as handsome in form and size as the Hamburgh, with a constitution equally as hardy, if not more so, than the Isabella.

Perhaps no better varieties can be chosen than Black Hamburgh for a black, and Chasselas Fontainbleau or Dutch Sweetwater for a light colored class, as these kinds are very sweet and devoid of that hard pulp which predominates in the hardy sorts. The Frontignans or Muscats I would not make use of, for the natives have already too much of the musky flavor. By introducing the sweetness of the Hamburgh and Chasselas, we shall be most likely to reduce in a corresponding degree the foxiness of the natives, which is likely to produce a Muscat flavor and Hamburgh size of berry and form of bunch. I do not presume to say that this can be accomplished in one generation, but perseverance in the right track is sure to bring it out in process of time. To ensure success, some care and attention is necessary; more will be accomplished, with care, from a dozen seedlings, than by a thousand without it. The plants to be operated upon, should be in robust health, neither having at any time shown symptoms of mildew, and the flowers of both selected from fine and well shouldered branches. The operation of fertilizing is also a somewhat delicate one, and there is some difficulty in getting the two sorts to bloom at the same time,—for the exotic, to be perfectly free from mildew, will, almost without exception, have to be under glass, and the native on account of producing hardiness should be planted outside. A temporary glass frame to forward the latter would be of service, and the former might be retarded by excluding the light till the buds burst and afterwards keeping the head down in a cold house. When the hardy sort begins to open its flowers the stamens should be immediately cut out, and the stigma fertilized by the exotic, for on this depends all success, as any plant will more readily be impregnated by its own than

another's pollen. While the mother plant is in bloom, care must be taken to keep off insects, and the female should be some distance from any other grapevine which is in bloom, for the pollen is a very subtle substance and a proximity might destroy all success.

As this subject is of such paramount and national importance, you will perhaps think these few hints of use to some of your numerous subscribers.

Yours most respectfully, WM. CHORLTON.

New Brighton, Staten Island.

THE CALIFORNIA GRAPE.

BY R. G. PARDEE, PALMYRA, N. Y.

THERE has been an unusual interest for some time past, to learn something definite respecting a grape growing in California, of which almost every return traveller speaks in the most extravagant terms.

During the State Fair at Rochester, I was privileged with an interview with an intelligent officer in the U. S. Army, CAPT. H——, who, with his accomplished lady, spent a year or two in California, mostly at San Diego—and from whom I gained a more reliable and particular account than I have hitherto seen.

They assure me the grape is of richer flavor as a table fruit, than any of our foreign vinery grapes, and we had just been eating some of those superior Black Hamburgh and others, to which the first premium was awarded at the state fair.

The grape is a reddish purple, but a trifle larger than a full size Catawba, and yet the bunches are enormous—often weighing three pounds, and some twelve to eighteen inches long.

It is always cultivated in the vineyard mode, except each vine, instead of being trained to a pillar, is allowed to fall in a heap on the ground, under which hangs three or four enormous bunches of these unequalled grapes. They say as far as their observation extended in California, and certainly in the vicinity of San Diego, there is no such thing as a native or wild growing grape, to be found. Capt. H. says the grape makes a fine wine, very similar to the Tarragonna wine of Spain, and he saw some immense wine vats for making wine on a vast scale, which were built a long time ago.

The general impression seems to be, that the grape was imported from Spain many years ago, and has improved in flavor by being cultured in the very genial soil of California, so that now it cannot be identified with any foreign grape.

Whether these impressions are correct, could very soon be ascertained, if the cuttings were sent across the Isthmus this winter, and placed in a process of cultivation.

R. G. P.

We have heard before of this fine grape—which is probably some variety from the South of Europe, not introduced into our collections. Will not some of our readers who have friends travelling through San Diego, take a little pains to get some cuttings of this variety. In winter they might be carried in one's trunk, as easily as dry sticks. ED.

Reviews.

1. Address before the Norfolk Agricultural Society *at Dedham, September* 26, 1851: By George R. Russel.

Mr. Russell's address before the Norfolk Society—one of the youngest, but certainly one of the most energetic in Massachusetts—deserves more than ordinary attention. It is a production full of vigor, earnestness and pith. It is replete with evidences of scholarly culture, adding what is even more important, a right understanding of the present condition and wants of the agricultural class; and it is enlivened with genial strokes of humour that doubtless gave it no little effect in the delivering.

Mr. Russel speaks to the point on the all important subject of *agricultural education*, and we cordially agree with his views as expressed in the following extract:

"The advance of our cultivation is often retarded by the indifference of the cultivator. There are to be found those who scoff at book-farming as useless, maintain that there can be no improvement in the management of the soil, and look at a newly-invented implement as an insult to their ancestors. They would go on as the latter have done, not reflecting, that if successive generations did not add something to the stock of knowledge, we might get back to that patriarchal period when the broadest branched tree was the best house, and red paint the most fashionable garment; when the economy of the kitchen consisted in robbing the hoard of the squirrel, and the ten fingers were the only tools that scratched the face of mother earth.

A blind reverence for the past is the great stumbling-block of the present, and flagrant injustice to the future. Do as our fathers did! It is well we should, when we can do no better; but man has been made a progressive creature, is endowed with aspirations after excellence, has implanted in him a restless energy that is continually urging him onward. He could not stop if he would. He partakes of that law of motion which governs all things, from the smallest particle of animated dust, up to the infinite worlds which, cluster on cluster, system within system, whirl in endless revolution round the throne of God.

The fanatic, who threw a stone at the Earl of Rosse's telescope, because it pryed into mysteries, intended, as he believed, to be concealed from human curiosity, was a type of that conservatism which would have no new farming. It would not encourage the undutiful longings of children, who strive to know more than their parents. It would level the school-house, entertaining Jack Cade's opinion of men "that usually talk of a noun and a verb and such abominable words." Of what use is education, but to engender self-conceit and encourage wasteful expenditure. Why buy volume on volume, and cover black-boards with cabalistic characters, when "our forefathers had no other books but the score and the tally?"

Advancement is the destiny of man. He who stops in the race is run over, and left behind, crippled and forgotten. Whatever may be the limit to human attainment, it has not yet been discovered. We press forward to an eminence from which we hope to behold all created things, but it is reached only to find heights to be climbed and difficulties to be surmounted.

It is too generally supposed, that education should be confined to the "learned professions"—that it is well to fill the heads of lawyers, doctors, and clergymen; but as for the farmer, merchant, and mechanic, it is better that their drudgery should not be disturbed by any information beyond the rudiments. If the farmer can read the almanac and weekly newspaper, the merchant keep his accounts in tolerable condition, and the mechanic spell out the orders on his slate, they are presumed to be amply provided with all the erudition necessary for their vocations. The patronage of the state and the munificence of private individuals have been reserved to encourage a course of education, which had its origin in the wants of a privileged class of a bygone age, and is, now, of questionable use, even to those who intend to enter the pulpit, the sick chamber, or the courts of law. But, for the ordinary purposes of active life, the college student, when he is turned adrift with his diploma in his pocket, is about as helpless and useless an object as can be cast on the cold charities of the world. His nursing mother, after softly rocking his cradled slumber of four years' duration, suddenly shakes him off, in an unweaned state, thrusts

him into the street, slams to and bolts the door, and there he stands, in hopeless dejection, wondering what to do with himself. "Necessity's sharp pinch" arouses him. He finds that the speculations of philosophy do not yield an available income, nor can he feed on Greek roots. He discovers that the world is a very unclassical sort of a place, and requires an equivalent of more solidity than Latin verses, or the species of knowledge that can be applied to nothing. He begins to suspect that he must learn something useful; and he lays himself down to his new preparation, forgetting, with all possible celerity, the little he has acquired during his college life.

It is not my intention to undervalue classical education. There are scholarly men to whom it is as the breath of life, and who, in sustaining its refining influences, take that share in the well-being of society for which they are adapted by taste and temperament. But it is one thing to feel enthusiasm for the charm of ancient genius, and another to limp along through

"The drill'd dull lesson, forced down word by word."

All things are not intended for all men. The usual course of university education, excellent as it may be in some cases, is the exception, not the rule applicable to the necessities of this age and this country, which, in general, require sciences that can be applied to the useful arts, and knowledge that can be turned to account.

While learning has rarely called in vain for assistance, when its object has been to swell the already overcrowded ranks of what is generally understood by professional life, there has been little or nothing done to educate young men as farmers. The most important and the most honorable occupation, which is co-extensive with civilization, which employs millions of men in daily labor, and on which the whole population of the globe depends for subsistence, has not a single institution devoted to it in all this broad land. It is left to help itself as it can, without Government protection, and with only such encouragement as can be derived from societies formed by farmers themselves. The exertions which have been made to establish an Agricultural School in this State, have not yet been successful, but it is to be hoped that they will be renewed and persisted in, until this great branch of industry shall receive the care and attention it demands. It is not supposed that an institution will turn out ready-made practical husbandmen to order, from the mere learning of books. There is no such intention or expectation. But it is believed that a course can be followed, which will combine theory with practice, and produce young men of intelligence and activity, whose hard hands and bronzed faces will bear honorable testimony that they have seen as much of the field as the study-room.

It was a saying of Napoleon, that "battles make soldiers." It is equally true, that hard work makes farmers. He who would "thrive by the plough," must leave his gloves with his Sunday coat. He must not expect to walk daintily over the earth, in holiday garb, and have her productions spring up in his footsteps. He who courts her favors, must go manfully to the work. She is not to be trifled with, and does not yield to coy wooing. The badges of her successful suitors are the dust of the ploughed ground, the sweat of the hay-field, the marks of honest industry wrought out in shirt sleeves. She loves the pressure of the cowhide boot, smiles on the tanned countenance, and the sinewy limbs, on which the insignia of manhood have been ingrained by the elements. But she does not look less winningly, if the calculating head, which guides the laboring hand, has drawn information from recorded wisdom, gathered hints from the periodical, interchanged opinions with fellow workers, and brought thought to bear on the great mystery of nature. Excellence in agriculture is neither the result of closet study nor of assiduous labor. It can be effected only by a union of both. May the sagacity of Government consult the best interests of this people, by establishing the means of producing that as yet unknown prodigy, a perfect farmer."

Though Mr. Russel is a highly educated man, he is too much of an American to forget, as many college men do, that he belongs to a new age and a new country. He recognizes the spirit of the times and characterizes with trueness and point the master element of our modern enterprises:

"The guarding genius who presides over the New England cradle, is a very matter-of-fact working day spirit. Should he embody himself to mortal sight, then would appear no ethereal being, wreathed with flowers, hovering between earth and heaven, but a burly solid actuality; fixed on the firm ground, his hair filled with hay seed or cotton, his throne a country-house stool, his wand a shovel or hammer; decked, not in fairy green,

but in stout frocking, or factory skirting rolled up at the elbows. There is nothing green about *him*."

There is a large catholic spirit in the following remarks—which contain a worthy rebuke to those who distrust the tendencies of immigration:

"What is said of England, equally applies to the other highly cultivated countries of Europe, it being conceded that there is no one whose productiveness might not be increased to the necessities of its population. Yet, worn-out civilization broods, despondingly, over the apparently exhausted elements of fertility, and covering the seas with the superabundance of the old world, extends an unbroken line of emigration towards the setting sun. It comes to spread itself over this new land of promise. It comes with the antiquated usages of past generations, to renew, on a virgin soil, the hopes which have withered in ceaseless and unrequited labor. It comes to demand from the reclaimed earth, food and raiment and shelter; to seek comfort, independence, protection; to trust to an unknown land for the peace and subsistence denied in the much-loved places of its nativity. It comes to clear the forest, drain the morass, open the dark dank face of nature to the breath and light of heaven. It comes with limbs accustomed to delve and burrow, to do the rough work of this young country—to build her cities—to construct her railroads and aqueducts—to level her hills, fill her valleys, tunnel her mountains, span her rivers. It comes to unfold the resources of this vast continent, to people its recesses with active life, and to disturb the silence of its solitudes with the hum of industry. It comes to carry out the designs of the Creator, a predestinated agent to work his will, and take its allotted part in the great drama enacting on this new stage of human destiny. Let Europe, then, pour out her population upon us if she will. There is room for all. Room in the primeval forest, on the boundless prairie, on farm and in workshop. Room in the schoolhouse, where the children of ignorance may be qualified for the duties and objects of life, preparing for future usefulness by a process of regeneration that shall atone for the neglect and degredation of the past. Withhold not from others the privileges we possesss. They come as our fathers came. Grudge them not a portion of this ample inheritance, which is for all the sons and daughters of God who need a home."

II. Sketches of European Capitals, by William Ware, *Author of Letters from Palmyra, &c.* Boston: Phillips, Sampson & Co.; 1851. 1 vol. 12 mo.

One of the most delightfully instructive volumes for a long time published, is this new sketch-book of Mr. Ware's. By persons of refinement, and especially to such as have a taste for art, it will be read and re-read with increasing delight. It rarely happens that an American of so much artistic feeling and culture, adds to that feeling so much literary ability as Mr. Ware does. You feel it to be a peculiar pleasure to linger over the fine galleries of art, and the rich facades of old capitals, in his company. His appreciation of the beautiful is so genial, and ready, and warm, and his utterance of his enjoyment is in such pure and choice English, that it is a noble delight to sit at his feet as a pupil and learner.

It is neither our province nor our intention to review Mr. Ware's book. We only wish occasion to make a comment or two upon his notice of the English Parks—especially since town parks, in the proper sense of the word, are just now subjects of attention in this country.

"Another similar feature of London, similar for magnificence, for vastness, for an indescribable nobleness, is its parks. They are in no proper sense of the word, however, parks, unless you mean deer parks. They certainly are rather vast landed estates, farms, sites for towns and cities. It is a misnomer to speak of a city park which you can neither see across nor travel round, in the midst of which, in an English atmosphere, you might easily lose your way, and may be as easily robbed and murdered—so far as society *could* know anything about it, as in the midst of Hounslow Heath, or the Arabian Sahara. They are the country, rather than parks; a portion of the country fenced in, with houses just visible in the distance. *There*, where the whole Island is hardly bigger than some of our states, those parks, are several of them, four hundred acres each. *Here*, where in our American cities, territory is a mere drug, cheap and illimitable, the largest of our parks, or squares, hardly reach forty acres—I suppose, on the principle that what is common, cheap, plenty, is to be despised. But these English grounds, though too large for comfort, use

beauty or safety, have the single merit of consistency; they are in due proportion to all the rest of London, and the character of the people.

St. James' Park is the true size for every object for which a park should exist at all; large enough for beauty, air, health, exercise. Nothing can be imagined more elegant in its design, more complete in its plan and ornament. It may be considered a model for all the world of landscape gardening, and for all city parks; any deviation from which must be so far into error. It is a gem of beauty and elegance, and is, one cannot but think, the most beautiful piece of cultivated ground in the world; so different in its graceful curves from all our rectilinear plantings, and in its charming variegated shrubberies, from our unending monotonous elms. I would not decry the elm. I saw no oak or elm in England, that would compare for grandeur with our elms, especially of the valley of the Connecticut. But we must beware of the proverb, "too much of a good thing," &c. The elm is not everything. St. James Park combines the beauty of the conservatory with the grandeur of forest planting. Here, trees, in groups, or if large, insulated; there, a dense parterre of shrubs and flowers; then, in addition, sheets of water with their appropriate inhabitants. Our Boston Common, with a moderate outlay of taste and sense, might, with its naturally varied surface, have been made as beautiful as the Park of St. James is now, one must suppose,—though still not too late for some change for the better—condemned for all time to their geometrical lines of elms and maples, as if there were in nature neither such things as shrubs, flowers, or curved lines. Our American idea of a city park, or square, seems to be—it is not the same thing in all cities—rows of forest trees, with straight paths between, which will conduct the business man, by the shortest possible cut, to his shop or his couning-room, allowing never the sacrifice of a foot or an inch to taste, the love of beauty, or the enjoyment of a walk. With the single exception of the Common in Boston, no other park or square in the country, exceeds some ten or fifteen acres. And, though so small, yet if well laid out, it were in most cases enough—better at least, and less of a nuisance—for that they are with all their vast extent—than Hyde, Regent's, or Victoria."

The impression of vastness produced on the mind of Mr. WARE by the London Parks, is precisely that which is felt by all Americans at first sight, and so far we agree with him. But he seems to have overlooked the highest merit of those parks, as compared with the larger parks of the continental cities, though his description clearly shows that he felt what he did not understand the true value of, viz: their truthful expression of *nature*. That they *are* like vast landed estates—portions of real country, with trees, streams of water, broad meadow-like surfaces, untouched by art, is just their highest praise, both as proving the real fondness of the English for natural beauty, (for all continental town parks are formal,) and as evincing a knowledge of the great charm and power of *contrast* in art; for nothing can be finer than the contrast of the great London Parks, so rural, so simple, so entirely natural in character, with the highly artificial aspect of the elaborated and complex streets and buildings of the city.

But Mr. WARE makes also a greater practical mistake when he complains of the *useless size* of the great London Parks. His error can only be explained by supposing he could only have seen them when London was comparatively deserted, or that he only walked there in the morning—when they always look lonely. One of the main uses of the great parks—Hyde Park, for instance—is for the purpose of taking exercise in carriages or on horse-back. St. James' Park, which is not undeservedly Mr. WARE's beau ideal, is only a park for promenade. It is too small for any other purpose, (though containing 87 acres,) and we have several times seen its numerous broad walks and alleys absolutely thronged with men, women and children, all enjoying their promenade. To understand the value of the Parks of London, one must visit them day after day, in the London "season"—and from half past three to six o'clock in the afternoon. He will then see Hyde Park, vast as it seems in the morning, completely and wholly taken possession of. The great circle, four or five miles round, will be one unbroken line of carriages, of all sizes and descriptions—Rotten Row, as the space particularly set apart for equestrians is call-

ed, will be gay with its hundreds of ladies and gentlemen on horseback—the banks of the Serpentine will be crowded with thousands on foot, enjoying the beauty of the "flood and field." At the same moment—especially on the days when the band plays, Kensington Gardens—which joins Hyde Park, will be filled with thousands of pedestrians—for no carriages are allowed there—though there are over three hundred acres of park there. When we state that we have seen over fifty thousand persons in Hyde Park and Kensington gardens, riding, driving, and walking, in a single afternoon, and that at the same moment St. James' Park was as gay with its thousands, it will, we think, be understood that the immense parks of London are no larger breathing zones than the lungs of a great, populous and wealthy city, require. Parks for promenade merely, are delightful features in a city, but much more delightful are carriage parks, which include the privilege of taking exercise in all ways. Hundreds and thousands of invalids, who are unable to walk, are enabled to enjoy the luxury of the open air, without the annoying rattle of the pavement, in the carriage path—while to those who own carriages, the pleasure of driving over a smooth park road, instead of round stones, is almost the whole difference of enjoyment or no enjoyment. What our great cities, therefore, should really aim at now, is, not little green squares, of no value except for promenades—but spacious carriage parks, large enough for all purposes of recreation and enjoyment in the widest sense.

As a specimen of the chasteness and beauty of Mr. WARE'S style, and the excellence of his architectural criticism, we quote the following passages upon some of the edifices of Florence:

"There are no palaces for a dark and sombre magnificence, like those of Florence. If one looked no higher than the ground floor, he would think much more of a prison than a palace; but if of a prison, it would be one for the incarceration of nothing less than princes or kings. But lifting the eye upward, and no one can longer doubt that he is examining the residences of some of the long descended inheritors of the power and wealth of Tuscany. They have about them, in a remarkable degree, an air of nobility. The forms are extremely simple, even to severity; no ornament which seems to be ornament for its own sake. The architecture, you will observe too, will have all the parts which properly belong to it, but beyond that, not a line, not a curve, not a moulding—nothing beyond the strictest demands of the order; and the order chosen you will find for the most part to be the simplest and severest of the fine, that to which the country has given its name, the Tuscan. I do not believe there is a more impressive building in Europe than the Ricardi Palace in Florence, the ancient residence of the Medici, in the days of the first Cosmo and Lorenzo. It preaches like a sermon; it harangues like an oration; it inspires like a poem. I came upon it unexpectedly the first day I was in Florence, and as I stood beneath its black walls of chisselled rock, with its massive overhanging cornice, I felt for the first time the power of architecture. And yet, palace though it be, it presents but two sheer, unbroken fronts, on the corner of two streets—no projection, no recesses, no towers, pediments, columns or piazzas,—two simple fronts with their magnificent cornice, that is all; but so grand are the proportions of all, as if Michael Angelo had written his name all over it, that for true sublimity, it far surpasses all other structures there, even the huge Cathedral itself.

The famous Cathedral—the Duomo, begun in the fourteenth century by Arnolfo, and finished by Brunelschi, in the fifteenth, is very vast, having a length of four hundred and fifty, and a height of three hundred and eighty-seven feet. And had it been built of one kind of marble, it would not have been without a very grand effect. It is impressive as it is, especially in its interior, with its rich painted windows, rich as if Titian had been the artist—but much is lost to the exterior, owing to its parti-colored material, being made of marble in alternate layers of white and black—a childish taste of the age in which it was built,—which disfigures many otherwise fine buildings, both there and in Pisa, and notwithstanding its great size, gives to the church in question the look of being only an uncommonly large toy. Its dome is considered its greatest glory and boast—and with reason—there had been nothing like it before. It was in point of time, before St. Peter's, and served as its model to Michael Angelo, who was never satisfied with gazing upon it, both

with admiration and a feeling of despair of ever being able to equal or surpass it; and was accustomed to say, as he looked up to it, "Like thee I will not build, and better I cannot;" yet he ended in building both like it and better. The dome of St. Peter's is both larger and far more graceful in its design. The style of this Cathedral is especially interesting, as it marks the point of departure from the Greek and Roman forms, and the introduction of the modern style of the Gothic. It is of a mixed character, like the great Cathedral of Pisa, (neither wholly the one nor wholly the other—the new, however, predominating very decidedly)—and which, in its more completed forms, has erected the noblest religious buildings in the world."

Domestic Notices.

TIMELY HINTS ON TRANSPLANTING.—*Novices* in planting always think it quite sufficient to place the roots of the newly moved tree in the earth again; *old planters* take care to prepare deep and wide holes—throwing out all the clayey or poor sub-soil, and mixing the good soil with plenty of manure or compost. New planters replant the roots just as they are—broken and bruised by lifting them out of the ground; old planters carefully smooth the ends of all bruised roots and cut off all broken ones—knowing very well that such roots, if not cut off, lead to a diseased condition of things under ground. Young planters are content with shovelling in the earth upon the roots and tramping it down with the foot till the tree is quite firm—by which many hollows are left under the tree and among the roots—whereby mouldy roots, feeble growth and often death ensues; old planters make it a vital point to see with their own eyes and feel with their own fingers that the fine soil reaches every fibre, and that not a single hollow is left among the larger roots. Young planters bury a tree three or four inches deeper than it stood before—by which the roots are put so far below the kindly influences of the air that the tree either dies at once or lives the life of a half-starved mendicant for years, scarcely growing at all; old planters plant the tree scarcely so deep as before, knowing that the roots will *run down* easily, though it is hard for them to *run up*. Young planters plant their trees on a level, by which, when the ground settles, they find their trees too deep: old planters plant them on a slight hillock, by which, when the ground settles, they stand precisely as they ought. Young planters, with their fine tender-heartedness, cannot bear to shorten the limbs of transplanted trees, and hence their trees struggle hard to live, and probably stand still for a year or two to recover; old planters, with their hard-earned better judgment, shorten-back half or two-thirds of the growth of the current year on all the leading shoots, in all cases—and in trees that have been much mutilated at the roots, they head-in the main branches still more, till some of balance is restored, so that their trees push out vigorous shoots the first year, and at the end of three years are far larger and handsomer than the unpruned heads of the young planters. And, finally, young planters often waste money in staking fall planted trees to hold them up, even in positions not windy; while old planters raise a hillock of earth over the roots eight or ten inches high, thereby steadying the tree, and protecting the roots till spring, when the soil being well settled, they take it away and the tree will stand alone.

THE HORT. SHOWS AND FESTIVALS.—The month of September has been an unusually *gay* one among both the Agriculturists and Horticulturists all over the land. Shows have been numerous and fine, and in several instances they have closed with festivals, dinners or balls, that have united the sympathies of the outside public and the immediate votaries of the art very happily. New Haven, Rochester and Norfolk County, seem to have been especially fortunate in these festivals. We regret that our numerous professional engagements prevented our accepting the many kind invitations to these fairs and festivals, which have been kindly showered down upon us, and for which we are

not the less obliged that we were not able to accept the welcome biddings. But indeed it would have been difficult for the best intentioned and most leisurely of guests to have done much more than sit down at one of the many tables, since our societies *will* persist in sending out all their cards of invitation the same week. Why should not some of them vary the matter by having their annual Exhibition in the early summer, at the cherry and strawberry season? It would be a delightful novelty at least, and we think, if well done, would have a freshness and brilliancy about it that would contrast finely with the usual rich but somewhat monotonous display of Autumn. If the Boston Society, for instance, would hold its next show under large tents in the beautiful grounds of some gentleman in the suburbs, it would be far more delightful and appropriate than this constancy to small halls in town. Mr. Cushing, or some of his neighbors at lovely Brookline, would, we should think, be as liberal in offering the use of grounds for a day to Massachusetts, as the Duke of Devonshire is to the London Hort. Society. *Nous verrons.*

Montgomery Plum.—I noticed in an article on plums, in your June number, something requiring explanation from me, but have not been able for want of time, to attend to it. I once called the Montgomery a plum, (though it goes by the name of prune,) and for this reason. It is customary in Lancaster to call any new seedling plum, or any nameless one, prune or plum, according as it is oval or round; it was so with Mr. Carpenter, and by the enclosed letter you will perceive it was also so with others. In the latter case, where two different sorts have the same name, it is well enough, but I think upon the whole, it were better for horticulturists generally, to curtail and simplify as much as possible, and not dub a plum "prune," simply on account of shape, without reference to sweetness or drying qualities. The above article also recommends the Groundacre plum, and knowing that there was a mistake in the name, I wrote to the namer of the fruit, Mr. Gundaker, of Lancaster, Pa., for a description, which he has kindly furnished, and which I take pleasure to enclose to you.

The Gundaker prune is doubtless the fruit Mr. Fahnestock alludes to, as it agrees with Mr. Carpenter's description of it.

The excessive heat and drouth of the last three weeks, has caused a heavy loss to the wine makers of Ohio, leaving but about one-third of the half crop anticipated, the balance being dried up. Three weeks since, my crop of grapes on three acres, was estimated at 600 gallons; today it is all pressed, yielding but 130 gallons, very sweet, but containing also much sediment, and I have done better than many others.

I was much pleased with Mr. Van Buren's experiments on the curculio, in the last number, and hope he will not be discouraged. I shall send you some of my experience when time allows. Yours respectfully, C. G. Siewers. *Cincinnati, Sept.*, 1851.

The following is Mr. Gundaker's letter referred to—

C. G. Siewers—Dear Sir: Yours of the 30th of August, came duly to hand. You inquire relative to the origin of the Gundaker plum. The fruit you allude to was raised by myself, somewhere about 32 years ago. I planted some seed, of what kind of fruit I do not recollect; there were about a dozen grew, and when going to inocculate them, two of which, judging by the leaves, &c., I let stand, thinking they would bring good fruit.

The one you allude to was named the Gundaker Prune, and the other Gundaker Plum. The prune is of a yellowish white color, nearly as large as the Blue Prune, and of the same shape, (oval,) very high flavored, and a good bearer. The plum is of a purple color on one side, and the other, a light color; heart shaped, resembling a plum called the Golden Drop, but larger in size, and a great bearer.

I should have answered yours before this, but my absence from home was the reason of my not doing it. Resp'ly your obd't servant, Saml. E Gundaker. *Lancaster, Sept.* 15, 1851.

Lime-wash for Curculio.—Dear Sir: I have noticed with much pleasure, in your September number of the Horticulturist, the success of Mr. Ludlow, of Yonkers, N. Y., on applying a new remedy against the attacks of the curculio. He tells us that he made a pailful of white-wash from unslaked lime, and mixed with it *a handful or two of flour of sulphur.* This

he applied three times, allowing three days to intervene between each application.

I have great faith in his remedy, and the more from an experiment which I performed upon two plum trees several years ago, which I will now describe to you. I had read somewhere this fact, or it had been related to me, that a man sowed gypsum, or plaster of Paris, in a field adjoining an orchard of apple trees, at a time when they were in full blossom. It was quite windy that day, and the plaster was carried pretty abundantly to all the trees on that side of the orchard next to the field. In the fall it was observed that those trees which received the plaster bore very abundantly, while the other trees which did not receive it, bore little or none; and I remember that the cause of the great bearing was attributed to the plaster. Receiving a hint from this, others had applied the plaster to other fruit trees when in blossom, and with similar good results. Having become acquainted with these facts, I resolved to try the efficacy of plaster on my two plum trees, which had previously been full of blossoms from year to year, but had borne no fruit of any account. This year they *were very full* of blossoms, and I applied the plaster by throwing it in a powdered state, on to the *blossoms*, in the morning, I think, and probably when they were somewhat moist with dew. In the time of their ripening, the tops of the trees were one almost perfect blush of purple. I never saw plum trees hang fuller in my life.

I did not then know that the plum tree was subject to the attacks of such an insect as the curculio, nor did I understand what connection there was between the plaster and the great bearing of the trees. The next year, I think, I left the place, and not till within the past year or two, having had any plum trees large enough to bear, I had forgotten all about my experiment, nor had I had seen in any quarter, notice of the continued application of plaster for the purpose of making trees bear more.

Mr. Ludlow attributes the perfect success of his experiment to the *sulphur*, and if he is correct, I think I can see now the reason of my success in the case I have mentioned. Gypsum, or plaster of Paris, is *sulphate* of lime, and by throwing this on to the blossoms, sufficient *sulphur* was communicated to them, and absorbed by them, to protect the growing fruit from the ravages of the curculio. I think I did not make the application but once. Perhaps, however, it had better be made two or three times—once, at least, after the fruit is formed. This method of applying the sulphur, i. e., by throwing ground plaster on to the blossoms, has this advantage over Mr. Ludlow's method, that it is more simple and easy. Yours respectfully, E. L. Hart. *Farmington, Ct., Sept.* 18, 1851.

Cheap Covering for Green-houses, etc.—I have a few words to say about a cheap and effectual covering for green-houses, pits, etc., which will answer for the American climate, as it has answered for our severe winters in the northern parts of Germany for the last 30 years, to the greatest satisfaction, under all circumstances. According to the size of your lights, have a frame-work made, so if put on, to cover the whole light sufficient. Take paste-board of the most common kind—tar it well over, so that the tar will soak well in the paste-board—do it a second time—then, according to the size of the paste-board, nail it on to the above mentioned frame, and put so many lath in your frame-work as to make the paste-board tight, or rather keep it, when snow or rain is falling, from bending on the glass. After that is done, give the whole another tarring over with a better sort of tar. I forgot to mention that it is best to put the tar on when it is either boiled, or made thin by means of hot stones put into it. After that is done, take a fine sieve and sift some sand over the whole, which will give it a nice appearance, and prevent any sticking which might be left by the last tarring. This, done every second or third year, will keep these shutters for many years. Any accidental hole can be repaired by sewing a piece of prepared paste-board in it. It is possible that many may think boards for shutters, cheaper and better than this; but any one acquainted with them, will know that the glass is very liable to be broken by them, besides getting so often out of repair, and being so very heavy when snow or rain falls on them. The way to secure these sashes, (or shutters,) must be left to any one's own choice.

P. S. It is the air, or space between the shutters and glass, which keeps the frost out.

Viola arborea.—I find it said in your columns, some years back, that this violet is grow-

ing like any other species, only being a good and double sweet blooming kind, not resembling any tree-like appearance. I beg to say, that if you trim the plant of its suckers continually, within two years, if well grown, you can have handsome plants, with a crown of one and half to two feet high. The plant is of double value then. F. T. M. Otto. *Flushing, Oct.* 6, 1851.

Preservation of Ripe Fruit.—To A. J. Downing, Esq.—About the season when the Madeleine Pear is ripe, (in July,) I expected a friend, who I knew would be delighted with the taste of this fruit. He did not however arrive until the fruit (which you know lasts only a few days) was nearly gone. I gathered, notwithstanding, a few good specimens, and putting them into a dry, covered, tin vessel, surrounded this with ice, where it remained for two weeks. This, so far as I am aware, was an original experiment, and I knew not, therefore, how it would succeed; but on the arrival of my friend, the cover being removed, I was not a little gratified, as well as surprised, to find that the fruit had undergone little or no change, several of the pears being still hard, while those which were fully ripe, when put into the vessel, had not decayed.

As the success of this experiment was wholly beyond my expectation, I have since tried it on other fruits, as early peaches, and summer pears, with equal success. I see no difficulty, therefore, in presenting our friends, on the other side of the Atlantic, specimens of our finest pears and peaches, if they are enclosed in dry tin or glass vessels, and placed in the ice-house of the ship. My experiments, however, have been made only with small quantities of fruit, the vessels holding each but one or two quarts, as a common tin-pail with a tight cover. If you think this new, and worth knowing, please insert it. Yours truly, J. L. Comstock. *Hartford, Ct., Sept.* 1851.

A very simple and very successful experiment. Since receiving this account, we notice in the Liverpool papers, that an American has carried out peaches in the same manner, and had the pleasure of presenting them to his friends in England in the finest preservation. It is not unlikely that this amateur experiment may lead to a large business in exporting the more delicate fruits. Mr. Tudor, of Boston, familiarly known as the "Ice King,"—must, however, have the credit of the discovery, for his ice ships have for several years past been in the habit of supplying the wealthy citizens of *Calcutta* with fine American apples—carried out with the ice. Ed.

New Portulaccas.—In my communication last month, I described only one new variety, viz. the crimson and yellow, and that had not developed its full character. Shortly after, another bloomed, even more beautiful than the first. It is a white, with crimson stripes. The white Portulacca, already known, sports occasionally by an aggravating dash of crimson upon one or two petals, and sometimes a whole crimson petal, etc; but the new variety I have obtained has a distinct and decided character, combining, in every flower, the colors of the two parents, crimson and white, presenting a flower delicate in its pencillings, and beautiful in the extreme. The pure yellow and pure white, are both feeble plants compared with the crimson and scarlet varieties, the crimson being the strongest grower of all. The *crimson and yellow mixed*, partakes largely of the strength of the crimson, and the flowers are quite as large. The *white and crimson mixed* is not quite so strong as the last named.

The crimson and yellow mixed, sports exactly as I predicted, and makes an extraordinary show. The mixed flowers predominate, but nearly every morning it puts forth among its varigated flowers one or two of pure crimson and of pure yellow. The white and crimson mixed, thus far has not shown the sporting character, every flower being beautifully striped. It seems from the character of these varieties of Portulacca, that it comports itself exactly like the *Mirabilis Jalapa*, the common marvel of Peru, and I infer that we shall soon have as many varieties of Portulacca as we have of that plant; and what is somewhat interesting, to anticipate all the same colors and mixtures. It is worthy of note here that Mr. McLeod, Florist of this city, had in his garden this season, a double flower of the crimson Portulacca. It was accidental. I omitted to mention that the two new varieties of Portulacca were all that were obtained from a large number of plants.

Chas. G. Page. *Patent Office, Washington, D. C., Oct.* 1, 1851.

Mice Disbarking Trees.—After so much experience, what is, in your opinion, the best remedy or preventive of mice from gnawing young orchard trees.

I have a large quantity that are, or will be, somewhat exposed, and I want to take early measures to prevent injury. If coal tar is recommended, how am I to judge that it is not too strong so as to injure the trees? In haste, respectfully, T. G. Yeomans. *Walworth, N. Y., Oct.* 2, 1851.

We believe the best preventive to be the following. Just before winter, throw up a small hill about a foot high round each tree—removing it in the spring. The mice look for the tender bark at the surface of the ground, and not being able to find it, let the tree alone.

Coal tar is found dangerous—sometimes serving the purpose well—but, when too strong, killing the tree. Ed.

Seedling Grape.—Mr. Downing—Dear Sir: Herewith I send you a few bunches of grapes from a seedling vine, which has produced fruit this season for the first time, and should like to have your opinion as to the quality. The vine is now four or five years old; I do not exactly remember which. It is a strong grower, and I should say will prove a great bearer, if the fact of its setting about 100 bunches of fruit for the first time, goes for any thing. I picked off all but 40 bunches when the fruit had attained a good size. In fact, the fruit was larger a month after the blossom, by one-half, than that of an Isabella vine that is on the opposite of my garden. The vine has had no cultivation whatever, and I have no doubt that if we had had more rain, the berries would have been very much larger than they are. It strikes me as a very good flavored grape, but as I know nothing about the various seedlings that have been produced, I must leave the matter to some good authority like yourself. If not too late, I would like to have your opinion in the October number of the Horticulturist. Yours respectfully, A——. *New-York City.*

The specimen of the grape above referred to appears to be precisely like the Catawba, only riper and sweeter than the Catawbas were at the time they were received; in color, size and flavor, however, it resembles the Catawba precisely. Another season, it will be worth while to notice if this seedling Catawba ripens *earlier* than the original variety—as if so it will be more valuable. Should it turn out earlier, we hope "A." will let us hear from him again. Ed.

Scarlet Horse Chestnut.—The Horticulturist notices a double flowering Horse Chestnut, grown by Mr. Rivers in England, and which will probably soon be introduced into this country. Can the editor of the Horticulturist give us an account of the scarlet flowering horse chestnut grown in Newark, N. J., and the best manner of propagating, and whether trees can be obtained? Can this variety be engrafted successfully upon the common chestnut?

The true scarlet Horse Chestnut is rare in this country—we know of no large specimens except in Philadelphia. Mr. Buist of that city and Messrs. Parsons of Flushing, L. I., we think have it for sale. It is propagated by whip or splice grafting on the common horse chestnut. Ed.

The Largest Pear Yet.—We received this morning from the garden of Dr. I. M. Ward, an enormous pear of the Duchess d' Angouleme species, which weighs 18 oz. and measures 12 inches in its smallest circumference, and 13 inches in the largest. This rather beats the one noticed the other day at the Astor House, which weighed 16 ounces, and was supposed to be the largest on record.—[*Newark Daily Advertiser, 13th.*

This is by no means "the largest pear yet." A specimen of this same fine variety—the Duchess of Angouleme, was raised by S. Leeds, Esq., of Boston, last year, which weighed 25 oz., and measured 15 inches in circumference—the largest way. We have an exact model of the fruit on our table, made by Mr. Glover of Fishkill Landing, N. Y., and colored to the life. Very large and fine flavored specimens of the D'Angouleme are easily produced in rich deep soil—especially when the tree is grafted on quince stock. Ed.

A Model Hotel for Country Towns.—We copy the following description by Willis, of the Hotel at Taunton—which has become a celebrity—both as a record of progress in architecture and as a warning to landlords about building this kind of property, not to fall behind the spirit of the age. The style and conve-

nience of town hotels generally have been exceedingly improved within the last ten years—but those in the country are for the most part lagging behind. In the country where every body travels, too much attention cannot be paid to designing and keeping hotels, in the best manner. Ed.

"Taunton has stolen a march on the progress of the age. It probably shows the effect of a few superior minds among its business population. The singular advance beyond other towns of same size is visible in many things; but, among other surprises for the traveller, there is a hotel of Venetian architecture, built in as good taste as any gentleman's residence in the country, and furnished and kept in full accordance with its peculiar elegance of exterior. The contrast, between the impression with which one would probably visit the town for the first time, and what one finds there, in the advance of art and luxury, could scarcely be exceeded. One hears of it as the place for nails and herrings, and, if there is a peculiarly intense specimen of the Yankee to be written about, he would be described as coming "from Taunton, good Lord!" by every anecdote-monger in the country. Yet neither at Windsor nor Versailles would the traveller be lodged and waited on half so luxuriously, nor in any small town in England would the private residences, and their accordance with the natural features of the place, show a taste more refined and liberal. The public square — Taunton Green, as it is called—is heavily shaded with old and venerable trees, and it has the effect of a noble court-yard to the richly balconied and turreted hotel, while on its opposite sides are one or two mansions of model architecture and grounds—the sitter in any one of the picturesque galleries, upon which open the long windows of the public house, having nothing within view that would not accord with his dream of the most tasteful stopping-places of Europe."

Pennsylvania Hort. Society.—The stated meeting of this society was held on Tuesday evening, Oct. 21—Dr. W. D. Brinckle in the chair. The displays of fruits and vegetables were very rich. One collection of plants from Robert Buist's houses, were interesting; but the object most admired, was a cut flower of the *Victoria regia*. This specimen was in the finest condition of any heretofore shown before the society, and was truly beautiful. A number of handsome baskets of cut flowers and bouquets were exhibited. The show of fruits was remarkably fine, and consisted of grapes—very large White Syrian, from H. B. Tidden's houses, Tacony,—Black Hamburg, from H. W. S. Cleveland,—Blade Morocco from the President's, and Decandolle, from Miss Gratz's. Of pears, there was a great variety, and some luscious specimens. Isaac B. Baxter presented large and fine Duchess d'Angouleme; Mrs. Jno. B. Smith, Passe Colmar, Sieulle, D. d'Angouleme, Buerre d'Alembert and Holland Green; Caleb Cope, Beurre Diel, Sieulle and Bleeker's Meadow; Edm'd Jones, Kingsessing, the Jones; A. M. Eastwick and A. Fulton, jr., two unknown varieties. Other varieties were shown, from C. B. Lines, New-Haven, the Calhoun, Jones' Winter, Jones' December and January; from J. C. Hastings, Clinton, Oneida Co., N. Y., Fredericka Bremer; from Matthew Mackie, Clyde, N. Y., Sheldon; from J. P. Cushing, Boston, Doyenne Gris; from M. P. Wilder, Boston, six native and nineteen foreign varieties. Of apples, M. Synder exhibited—Bellflower, Hages, Pennock, Carthouse and Smokehouse; Jno. Perkins, Ridge Pippin and Pennock; B. F. Hodges, a seedling from the Bellflower; and from J. W. Bailey, Plattsburgh, N. Y., Bailey Spice, and Snelly Autumn; from J. C. Hastings, an unknown variety; from M. Mackie, the Clyde Beauty, and from —— N. Y., Baily Spice, Fall Harvey, Jack, Jewett's Red, Late Strawberry, Melon, Minister, Northern Spy, President, Sweet Baldwin and Sponge. Of vegetables there were five tables of well grown esculents.

A special report, emanating from the committee on plants and flowers, fully describing the *Victoria regia*, as it appeared when visited by the committee on the 28th of August, was submitted, and their recommendation that a gold medal should be presented to Caleb Cope for his liberality and energy in bringing into successful and mature growth that truly wonderful water lily, was unanimously sanctioned by the society. In the report of the committee on flowers and designs, at the recent autumnal exhibition, read this evening, a recommendation awarding twenty-five dollars to Jno. Ellis, gardener to Caleb Cope, for his skill in the cultivation of the *Victoria regia*, was also concurred in by the Society. Thos. P. James, Rec. Secretary.

The Berkshire Hort. Society held its fourth anniversary at Stockbridge, on Wednesday the 17th of September. The number of

contributors exceeded those of all previous exhibitions. Hon. Edward A. Newton, of Pittsfield, presented specimens of eleven varieties of pears, grown to perfection on his unfavorable soil in Pittsfield. Gen. William Williams, Judge Byington, and G. P. R. James, of Stockbridge, Hon. Asahel Foote, of Williamstown, and others from different Societies, presented specimens which give assurance that the choice varieties of this delicious fruit can be successfully cultivated in our hill country.

The show of apples, among which were the Baldwin, Northern Spy, and many other choice varieties, was more varied, and all that would be anticipated in a region where fruit *culture* is yet in comparative infancy. We say in its infancy; we have many old orchards, in some of which valuable fruit is to be found, yet the idea has been too prevalent, that good fruit could not be successfully raised on our old and too much exhausted soil. But the exhibitions of the two last years, are doing away these impressions, and in consequence new orchards are springing up every where.

Plums were exhibited from some half a dozen towns. The varieties were numerous, and the specimens all fine. We had seedling peaches, too, such as would make the mouth of a Jerseyman water, in rich abundance.

Premiums on pears were awarded to Hon. Edward A. Newton, Pittsfield; William Williams, Stockbridge; William G. Backus, Pittsfield; Edward C. Carter, Stockbridge. On winter apples, to Judge Byington, Edward C. Carter, D. R. Williams and Isaac Bassett. On fall apples, to D. F. Goodrich, Mrs. Jane Sedgwick, William G. Backus. On peaches, to William Williams, Mrs. Hamlin of Sheffield, and Thomas Wells of Stockbridge. On plums, to Edward A. Newton of Pittsfield, Samuel Goodrich of Stockbridge, and Asahel Foote of Williamstown. On garden vegetables, to D. F. Goodrich of Stockbridge, Graham C. Root of Sheffield, and R. A. Galpin of Stockbridge.

The premiums on flowers, were, to Mrs. James Bradford of Sheffield, for a fine display of (27 varieties) Dahlias. On cut flowers, to Mrs. Whitney of Stockbridge, Miss Susan Pomeroy of Stockbridge and Mrs. Sarah L. Clarke of Richmond. On verbenas and German asters, to Miss Elizabeth Spaulding of Stockbridge. A second premium on asters to Mrs. Mary Goodwin of Stockbridge, and one on Dahlias to Mrs. Root of Sheffield.

An interesting and poetical address was given by the Hon. G. P. R. James, and the zeal and good feeling brought out by the occasion gave good assurance that old Berkshire, among the first to excite emulation by her cattle shows and fairs, is determined, though her mountains are cold and her soil hard, not to be the last nor the least in her horticultural achievements. W. Bacon. *Richmond, Oct.* 1851.

Oswego Hort. Society.—The September Exhibition of this society was held on the 11th, at the City Hall. The display of fruits much exceeded any former one, in quality and variety. Among the peaches worthy of note, was a basket presented by Mr. J. McNair—the fruit of very large size—melting, and very juicy, with sprightly flavor, and a remarkably thin white skin, which I am unable to identify with any of the sorts described in books. The character of the leaf (serrated) induces me to suppose it is the Sweetwater, described by Thomas. It is among our earliest peaches, but too good to belong to the Early Ann or Nutmeg family. The tree is now upwards of 30 years old—produced its largest crop this year, and is yet in full vigor. The variety is extremely difficult to propagate from buds. Can you inform us what it is? [No doubt the Sweetwater.]

Mr. Worden presented seven good varieties, among them, White Imperial, Large Early York, and Red Rareripe—the last grown on trees 35 years old. Mr. C. S. Phelps, seven varieties—George 4th, Grosse Mignonne, and orhers; the Rec. Sec'y, 10 varieties, of which the Early York and Bergen's Yellow were the finest. Among them were a doz. of the Malta—the "spurious sort"—as the leaves have glands. The trees were grown on Long Island, and planted here in the spring of '46. Now, as this is not the true Malta, but yet a large fine fruit, and withal pretty widely disseminated, can you tell me what it is?

Of Pears, the best varieties were Bartlett and Dearborn's Seedling. These, with some fine specimens of Stevens' Genesee, from the garden of Mr. Phelps, were about the only kinds of merit sufficiently mature for eating. Mr. P.'s

tree of this last variety, from which the pears were taken, is nearly gone with blight, and I regret to see that this valuable sort is peculiarly subject to that malady in this region.

PLUMS—Worthy of note, were Imperial Gage, by Miss CARRINGTON and A. P. GRANT; Bolmar Washington, by Messrs. BEARDSLEY, PHELPS, BROWN, and others; baskets of assorted varieties by Mrs. J. TURRILL, Mrs. I. S. ISAACS, and others.

NECTARINES.—Mr. J. W. P. ALLEN exhibited 4 varieties; Mr. A. P. GRANT, and Mr. W. BROWN, a dish each of the Argyle and White; Mr. GEO. SEELEY, the Elruge—all very large and perfect.

Mr. W. R. SMITH, of the Macedon Nursery, exhibited 15 varieties of the pear, 28 of the apple, and 30 of the peach: the last mostly in perfection, and of the finest quality. Prominent among them were Early Crawford and Bergen's Yellow.

I must not forget to add, that among the best peaches was our *Beckwith*, a native of Oswego, a very large and delicious variety, reproducing itself from seed in nearly every orchard and garden, and never failing to produce abundant crops. Respectfully yours, JNO. CASEY, Rec. Sec'y. *Oswego, Oct.* 20, 1851.

CHAMPLAIN VALLEY HORT. SOCIETY.—The doors of the Court House were thrown open to the members of the Horticultural Society of the Valley of Lake Champlain, and to the public, at 2 o'clock, Tuesday afternoon, Oct. 5, and we hazard nothing in saying that one of the finest exhibitions of the fruits and flowers, (more particularly the former) that were ever made north of New Jersey, greeted the admiring eyes of the numerous visitors. The surprise and gratification, on witnessing so superb a display of the beneficence of our soil, under careful and intelligent cultivation, were strong and universal,—more especially as but imperfect notice to the Horticulturists of our Valley of the intended exhibition had been given, and very many were wholly unapprised of the intention of the managers to bestow premiums. This is the *first*, too, of the attempts to bring out numerous samples of the horticultural productions of the fertile and quite extensive territory embraced in the bailiwick of the society, and we believe we have the warrant of the active and indefatigable PRESIDENT himself for saying that the response quite exceeds any expectations that were formed. Indeed we were assured by Mr. HOWARD, who has attended the annual fairs of the American Institute, in New-York city, for more than twenty years past, that he never saw so excellent a display of fruit at any one of them, both as respects quality, and variety, as was on the tables of our own youthful society, yesterday and to-day.

And this is but the beginning of the end. The Valley of Lake Champlain can do vastly better. It can produce apples, pears, grapes, quinces, &c., &c., and the wide range of garden esculents, that need shun no comparison with those of any other portion of the globe,—and produce them in boundless profusion. And it *will*. It is manifest that the untiring and creditable zeal of numerous intelligent and spirited gentlemen (and ladies, too) on each shore of our lake, is working out successfully a most profitable problem, to wit: the *advantage* of the scientific cultivation of fruit in the Valley of Lake Champlain, and the congeniality of the soil and climate for such cultivation. They have pretty much succeeded in the solution, and with what effect, the future annual exhibitions of their society will unmistakably demonstrate. We bid them God speed! "They are in their duty; be out of it who may."

We have neither time nor space to go into any particulars in reference to this very handsome display. There was scarcely a specimen of fruits or flowers, or of the products of the garden, in the Court House, that would not have attracted notice in any fair in the country. Where excellence was so universal, it is more than difficult to specify. We cannot omit, however, to mention the very beautiful *boquets* sent in by Mrs. ABEL HOUGHTON of St. Albans, as elegant and tasteful in their arrangement as they were choice and rare in their species, nor the superb floral contributions of Mrs. JOHN H. PECK of our own village which attracted very great admiration.

Our friends over the Lake, Messrs. BAILEY, of Plattsburgh, BATTEY and KEESE, of Keeseville, EVEREST, of Peru, HUBBELL, of Champlain, BARBER, of Beekmantown, contributed largely to the interest and value of the exhibition, as also did our next door neighbors Messrs. CURTIS, HOYT and PALMER of St. Albans, HUNT and LANGDON of New Haven, ALBERT CHAPMAN, of Middlebury, PENNIMAN and READ, of Colchester, LANDON, of S. Hero, WELLS, of Underhill, HEWES, of Georgia;—while our own townsmen, President WHEELER, Prof. TORREY, Messrs. GOODRICH, POMEROY, SMALLEY, H. P. HICKOK, Dr. HATCH, PIERCE, R. G. COLE, HASWELL, TUCKER, N. PARKER, and others, most creditably represented Burlington, in the friendly and honorable competition

The annual meeting of the Society, for the choice of officers, and for the transaction of such other business as may be necessary, will be held at Burlington, on the third Tuesday of February 1852, commencing at ten o'clock, A. M.

In connection with the annual meeting, there will be held, each year, an exhibition of winter fruits, at which any other article or production not unconnected with the objects of the Society may be exhibited.

The Secretary Dr. W. C. Hickok, requests us to invite all living in Champlain Valley to contribute to the winter exhibition.—*Burlington Free Press.*

Staten Island (N. Y.) Hort. Society.—The Third and last exhibition for this season took place on Saturday the 27th ult., and was attended by most of our fashionable residents. The judges were Mr. Reid, Mr. Boll (not Mr. Ball, the indefatigable Secretary of the Society), and Mr. Tryon the well known Florist of New-York. Mr. Thorburn not only sent a superb collection of his rarest Dahlias, but attended personally to aid, with his good advice, in the management. Mr. Dunlap presented a beautiful basket of flowers, and Mr. Boll and Mr. Reid very elegant bouquets. The display of flowers was perfectly dazzling, and pronounced superior to the Show which has lately taken place at Jersey City. Mr. Greene's "Gardener's Basket," was the most graceful thing we have ever seen, the same design, we believe, with which he took the silver cup last year at the Fair of the American Institute. Mr. Carleton made a fine display, and received many prizes. Mr. Aspinwall's floral design (an immense pyramid) contained many rare and beautiful specimens, and attracted much attention. Mr. W. H. Townsend exhibited many fine plants, and a beautiful collection of tuberoses that loaded the air with their delicious perfume. Mr. Nesmith exhibited some rare fruits and flowers, but not for competition. Mr. Ball again carried off the first prize for the amateur's basket, which was one of the most beautiful things on the table, quite new in design, and the flowers in excellent condition. Mrs. A. Field's basket evinced great taste in arrangement, and contained some beautiful specimens; and Mr. Dunning exhibited some of the rarest roses known in this country. The fruits were magnificent. Mr. Olmstead, of South Side, had a superb collection of pears from his rare trees, many of which he imported only last year, and are now in full bearing; we think he should have exhibited them together; being separated, many were not aware of the extent of his collection, which embraced upwards of twenty varieties of the choicest kinds; on this occasion we would gladly have offered our services to the *committee of taste*. The hot house grapes of Mr. Greene exceeded all we have seen, and reflect the greatest credit on his gardener, Mr. Chorlton; whatever Mr. Greene exhibits is always of the highest order. The vegetables were in abundance, and remarkably fine; a mammoth pumpkin from Col. Barret was certainly the *greatest* curiosity present, measuring some seven feet in circumference. The managers have every reason to be proud of this crowning effort to their exertions, while the subscribers and the public should feel much indebted to Mr. Nesmith, Mr. Griffith, Mr. Dunning, and Mr. Ball, for establishing a Society which must prove of the greatest benefit to the Island, and carrying it through its first season in such a brilliant manner; may their successors emulate their spirit, though for the success of the Society, we trust that no change will take place in the management, until their excellent plans are accomplished.—*Staten Islander.*

University of Albany.

Department of Scientific Agriculture.

The Trustees of the University of Albany, convinced of the vast importance which they should attach to the subject of improvement in Agriculture, have made this an object of special attention in their first steps toward the organization of a complete Scientific School.

Nearly all of our more intelligent farmers are now sensible that their profession is one which should be studied; that it is a profession in which the specially educated man occupies the same position of advantage that he does in every other pursuit of life. The old cries of opposition to all theories, and of condemnation against all books, are now fast yielding to an eager desire for instruction, and to at least a partial belief in the efficacy of science. Indeed some farmers go much farther than this, in expecting results that are at present certainly not within the range of possibility, and that there is little reason to suppose will ever be realized.

Instruction then is needed to supply what is called for by one class, to confirm the still doubtful minds of another, and to sweep away the too extravagant expectations of a third. It is also needed to enlighten the minds of a class, still it is to be feared exceedingly numerous, who look upon all progress with incredulity and suspicion, and who frown indignantly upon the idea that any one can impart new light to them in the way of their own business. Under the influence and the practice of such men as these, a great portion of our land is now deteriorating under cultivation, and will continue to deteriorate, until it reaches at last the condition of certain tracts in some of our older States, where the crop does little more than return the seed sown. Every year of the system now pursued by vast numbers of our farmers, increases by an immense amount, the labor and the expense that will be necessary in restoring the land again to a proper state of fertility.

That this evil is felt, that it is endured with impatience, is attested by the great numbers of active and influential societies for the improvement of Agriculture, in so many parts of the country; by the increasing patronage extended to agricultural books and periodicals; by agricultural surveys past or in progress; and by the numerous efforts toward the establishment of schools where scientific agriculture shall be the end and aim of study.

The reasons which operate so strongly in recommending Albany as the proper place for the location of a great Scientific School, tell with

redoubled force when the organization of the Agricultural department is considered. The capital of the greatest, most wealthy, and most powerful State of the Union; a State, too, more fully alive than any other to the cause of Agricultural improvement; the nucleus of the most powerful and influential Agricultural Society of the Union, a society whose annual shows bring together a greater concourse than those of any similar society in the world; the most desirable and accessible position with regard to the New England States, and on the great lines of communication north, south, and west, it presents a combination of advantages that may be properly called unequalled.

In view of such arguments as these, in view of the often expressed desire of the people of this State for at least the commencement of an institution which should have some special reference to the wants of its farming population, the Trustees have decided to go as far during the present season, as their means and the short time available for organization will allow.

They, therefore, announce a course of lectures by Prof. JOHN P. NORTON, now for some years in charge of the Department of Scientific Agriculture in Yale College. Prof. Norton will commence his course in the first week of January, and continue it during the ensuing three months. This course is designed especially for the practical man, and the subjects are intended to be presented in such a manner as to be perfectly intelligible to those who have never before attended to such studies. A complete and detailed outline of the general connections between science and practice will be given, and will be fully illustrated by experiments.

The substances of which the soil, the plant, and the animal consist, will be shown and their properties described. The soil will call attention first, with regard to its composition in different localities, its resulting fertility or barrenness, the means of improving by drainage, the composition and effect of manures applied, and the most economical methods of fertilization.

To this will succeed the plant, with an account of its structure in various parts, its composition so far as our crops, common trees, and fruits, are concerned, with the various theories of rotation; in this part of the course the nutritive value of the different crops is dwelt upon at considerable length, and illustrated by very full tables.

To such statements a notice of the animal economy will naturally succeed, prefaced, however, by two or three lectures on butter and cheese, giving the most authentic theoretical and practical information on all points connected with their manufacture, preservation, &c. After this come the various theories of feeding and fattening animals, with references to numerous practical examples.

By such a course the various beautiful theoretical and most important practical connections, between the soil, the plant, and the animal, will be distinctly brought forward, and impressed upon the mind of the hearer. Recitations and conversational meetings will be held in connection with the lectures, for such as choose to attend them.

Prof. JAMES HALL, of the N. Y. State Geological Survey, will lecture at the same time on Geology, and so much of Mineralogy as is necessary to the comprehension of his subject. This course will have especial reference to the bearings of Geology and Mineralogy upon agriculture, and other economical interests. The practical advantages of the connection of geological with agricultural science, will be briefly pointed out in the course by Prof. Norton; in this course these subjects will be more fully elucidated, and the student, aided by the State collection, and the very fine private one of Prof. Hall, will have an opportunity of obtaining such knowledge as will be of much value in after life, whatever may be his profession, and will besides be productive of infinite pleasure, as he may have occasion to visit various sections of of our country. Geological and mineralogical information, when possessed, is always called into frequent action, and gives its possessor weight and influence in any community.

A course on Entomology, with special reference to the injurious or beneficial action of insects on vegetation, may also be expected. This course will be by Dr. HENRY GOADBY, formerly of the Royal College of Surgeons, London. This gentleman will be able to illustrate his course by a collection of specimens altogether unrivalled, and exhibited to the class by means of the oxyhydrogen and the compound microscope. The advantages to be derived from such a course are entirely obvious, and have, moreover, been hitherto quite unattainable in this country.

Arrangements are in progress which will enable students to attend a course on Engineering and Surveying, a knowledge of which subjects would prove highly valuable and also remunerative to every practical farmer.

Prof. COOK, Principal of the Albany Academy, will deliver a course of lectures on Elementary Chemistry, to such students of this department as may desire it; the course to be both experimental and practical.

It would seem that any practical man must see the advantage of attendance upon such a course as has been dwelt upon in the foregoing portion of this circular. Science is brought forward and inculcated, not to supersede practice, but in its aid The information given is upon points which are really of vital importance, a knowledge of which ought to be looked upon as absolutely essential to every farmer. These lectures, too, come at a period of the year when comparatively little is doing on the farm, and may thus be attended without neglecting any material interest.

The importance to a young man of thus residing for a time within the atmosphere of a literary institution, can scarcely be overestimated. He comes in contact with others who are

also bent on improvement, and has also unlimited access to books; he learns to think for himself —to see that a practice is not necessarily right because it is old; he becomes favorably disposed to the adoption of every useful improvement, and the whole circle of his ideas and intelligence is permanently enlarged; he makes his profession an interesting study, not a mere routine of hard work, and while better paid for exertion, as superior well directed knowledge always is, he takes a higher rank in society as a man understanding his own business better than those who have not enjoyed like opportunities.

It is intended to offer free tickets to the courses on Scientific and Practical Agriculture, on Geology and Mineralogy, on Entomology, and probably on Engineering, Anatomy and Physiology, to two young men in each senatorial district of the State, the tickets to be at the disposal of the several Senators. The same privilege will be extended to each of the colleges in the State, the students to be selected by the faculty of each college from the graduating class of the previous year. It is hoped that this liberality may be continued in subsequent years, that in this way sixty-four young men may be annually aided and sent out to all parts of the State, to disseminate the valuable information which they have obtained. The tickets for the Agricultural lectures will be $10; for the Geological $10; for the Entomological course $5. All are payable in advance, but the student only attends such as he may select.

The price of board in respectable families varies from $2 to $2.50 per week, exclusive of washing. Two or more young men, by clubbing together, can hire a room respectably furnished, for the purpose of lodging and study, for fifty cents each per week, and can furnish themselves with food, fuel, light, and everything except washing, at a total expense of from $1.37½ to $1.50 per week in winter.

For farther information apply either to Prof. James Hall, Albany, or to B. P. Johnson, Esq., Secretary of the N. Y. State Ag. Society, Albany.

Another circular, in pamphlet form, stating the general objects and plan of this University at length, will soon be issued, and can be had on application as above.

The Country in Autumn.—A leaf from nature is never out of place, and having an ulterior object in view, we resume our woodland sketches, though a little after date. Trees have many a moral as well as economical lesson.

This is the month when the thistle is in blossom, and its fragrance breathes by the road-side. The sunflower also turns its golden circlet of leaves, and its black ripening seeds to the great luminary, and a few autumnal flowers, besides the flaunting faded dahlias, are beginning to struggle for possession against the summer weeds. The mower's work is almost ended for the season, and the reaper's is begun, so that the fields put on their show of stubble, though the meadows and pasture grounds, refreshed with rains and coolness, display a tender green, like the spring growth of grass, uncropped and unshaven. But the forests are still in all their glory. A deeper, darker green, verging in grand masses of foliage towards the brown and purple, with an indurated glossy lustre, is all that indicates the time of changing hues, and the fall of the leaf, and the departure of the glories of summer as near.

I am now in a region of great woodland richness, variety and beauty. The vast sweeping undulations, and fair sloping terraces, and distant long waving ridges of country, rising at the horizon into mountain ranges, are covered with deep forests interspersed with cleared and richly cultivated farms, so fair, so smooth, so green with lawns and fields of grain and meadows, that nothing can be more beautiful. The deep masses of the woods are composed mostly of the pine and maple, beautifully intermingled, the maple being far predominant. It grows to an immense hight and size, so that the forests here are truly magnificent. In the coolness and freshness of the dewy morning, how sweet to pass at early dawn into the depth of these grand old woods, or after seeing sunrise in the open glades, or on the upland lawn, to enter the forests when the trees are casting their earliest shadows, and the sun is throwing his slant beams upon the clusters of the topmost foliage. These majestic, tall, old trees, the growth of centuries, how solemnly they rise towards heaven, upholding and outspreading in such pendant arches, a waving roof of thick, fretted, interlacing foliage, over avenues of dim cathedral aisles. And when the wind breathes softly, or sweeps with surging gales over the leafy branches, how the whole forest whispers with the music, or roars like the thunder of the far off sea!

These mighty trees are the growth of centuries, and what depth of soil from centuries of decay! Here and there a vast tree lies along, the bark of which looks so sound that you would not dream of its being a tree in form only, and in reality a mass of moist vegetable loam; but you set your foot to walk upon it, and you plunge into it as you might into a huge rotten squash or melon. Sometimes the decaying trees are piled one upon another, moss-covered inches deep, the giant corses of the vegetable world, laid there by kindly nature in their open sepulcher, death amidst life, death nourishing life, new trees springing fresh and majestic from the skeletons of the old, and dropping the annual autumnal shroud of withered leaves over their former compeers in the forest. The heart of such a deep unbroken wilderness is truly a sublime, impressive, solemn spectacle. How many lessons it teaches, if only this *human* heart is in that suggestive, moral mood, in which, in such a spot as this, meditation may think down hours to moments. Nay, Cowper might have said ages to days; for you realise here something of the truth, that one day is with the Lord as a thousand years, and a thousand years are as one

day. Here are these trees, hundreds of years in rising, what grand products of time and nature, and almost as long decaying, and the processes of life and death go on in such sublime unconsciousness and carelessness, of time, as if it were an eternity of vegetation.

What grand and thoughtful objects! Seventy feet in height, some of the clean straight trunks rise up before a branch or leaf is visible, and then they spread in the sky their airy festoons and fans of foliage. The tall maples in the evening sun, look like birds of paradise spreading their golden wings, for nothing can be richer, in its transmission of the golden yellow light of sunset, than the delicate green leaf, almost transparent, of the maple. A maple seen against the sunlight, while its leaves are in their summer tenderness of hue and texture, is one of the richest and most splendid objects in the whole domain of nature. It looks as though it might have been bathed in the sea of glass in heaven, or in the river of the water of life, or in a pool of liquid topaz, so that a breath of wind across it would bring down, showering, a rain of golden light.

The play of light upon the leaves is like the changeful moods of thought and feeling in a sensitive soul, like the flashings and fitful pauses, and lightnings up again of expression, in an intelligent and watchful countenance. One can never be weary with observing the quick and magical variety. The whole forest is mottled with spots of sunlight, that takes the color of the leaf it falls on. But the loveliness of the sight depends on whether you observe the light falling on the foliage before you, and reflected from it to your eye, while the sun is behind you, or whether you look at the light coming to you through the foliage, and at the foliage with the sun behind it. The latter is much more beautiful. Indeed, as it comes and goes in the forest, it seems like a visible pervading spirit, now revealed, now hiding and withdrawing. The branches, leaves, and green earth seem to breathe with it, as if its coming and going were the inspiring and exhaling motion of the vital being of nature in these woods.

As the clouds pass and the light pours in, the depths of the woods are opened by it, the perspective of the retreating lines of trees is visible, and the radiant, sparkling air between, and the finest network of the interlacing foliage. Here and there a far off trunk, on the whole length of which the sun streams direct through some glade opening, is seen gleaming through a vista of green, and the eye runs down cloistered and festooned avenues and arches, seemingly interminable. Then again, as the sun is suddenly shaded, all is confusedly drawn together, unsphered of interspace, and comparatively dispirited and flattened, disenchanted I might say, for the coming and going of the light is like enchantment. The effect is as when you view a distant landscape with the telescope. If you get the right focus, all is clear, distinct, in full and bright perspective; but if you start the tube a line beyond or hither, then all becomes indistinct, obscure, glimmering, nor are any reaches of clear and radiant air visible between the intervals and openings of hill and valley, forest and winding dale.—*Independent.*

The Problem for a Republic.—The great Industrial Exhibition at London, which has just closed, has elicited many good speeches and original thoughts on both sides of the water. Its one leading aspect has not, however, been seized by any one so significantly as by Mr. Winthrop—a statesman always most completely American, and always broad and comprehensive in his views—in his late speech at Faneuil Hall, before the Mechanic's Association. The following extract will awaken thought in the minds of all republicans:

But let me ask, sir, who of us is sorry that we are behind, far behind, the old word, in articles of mere taste and ornament? Who does not rejoice that we cannot vie with Europe and Asia, in arts that minister only to the lust of the eye and the pride of life? Who is in haste to see the day, when the tissues and tapestries, the jewels and porcelain of India or of France, shall be native to our own land? Who, on the contrary, does not desire that such a consummation may be postponed, until that double problem shall be solved, of which the history of mankind as yet affords no solution,—first, how these sumptuous and gorgeous decorations of the rich can be fabricated without the degredation and debasement of the poor;—and second, how the morality and purity, which are the very vital air of republican liberty, can withstand the fascinations and blandishments of a corrupting and cankering luxury?

And this leads me to say, Mr. President, in a single concluding sentence, that there is at least one element wanting in that great exhibition, for the purposes of any just comparison between our own and other countries. We see there the products—but we do not see the producers. We see there the fabrics—but we do not see the hands which made them.

Sir, if it had been possible to exhibit, in any tangible shape, or by any personal representation, the real condition of the artisans and mechanics of the world; if the makers of every article could have been seen standing by their work, with their ordinary dress on their back, with their ordinary food at their side, and with all the advantages or disadvantages of their relative condition fully developed and displayed—their intelligence, their education, their wages, the amount of individual comfort, independence and happiness they enjoy,—the whole moral, social, and political position which they occupy,—what contrasts would not have been witnessed! If this very hall, with all that it now contains, could be wafted over the waters by a wish, on some magic

carpet like that described in one of the tales of the Arabian Nights,—if it could be set down safely in that much talked of "vacant space" in the American section of the Crystal Palace; and if your excellent President, now there, could be on the spot to meet you as you alight, and to say to the assembled throng of visitors: "Here are the American Mechanics—here are the men who build our ships, and our houses, and our bridges, and our railroads—who make our iron ware, and tin ware, and brass ware, and who construct those wonderful machines and invent those curious implements to which you have given your prizes—and here, too, are their wives and daughters—behold them, and compare them with your own"—would they not feel that it was something better than a vain-glorious boast, for us to exclaim:—

> "Man is the noblier plant our realm supplies,
> And souls are ripened in these northern skies!"

THE NORFOLK AG. SOC.—The annual Fair of this Society was very successful, and the anniversary dinner passed off with great spirit, on the 24th of September. The Horticultural display was excellent. The dinner to over a thousand ladies and gentlemen was furnished gratuitously by JOHN GARDNER, Esq., of Dedham, Mass. Hon. M. P. WILDER, the President of the Society, made the annual address, a portion of which being of more than local interest, we copy from the published report.

"The exhibitions of to-day furnish ample proof that progress has been made, particularly in the agricultural and horticultural departments, and settles a question on which there rested doubts previous to our first exhibition, whether Norfolk contained resources sufficient to sustain a large and successful agricultural association. The show of blood stock has never been equalled in this, if in any other county in the Commonwealth, and for which we are much indebted to the officers of the State Society and other gentlemen who have contributed by their importations or otherwise to this department.

The exhibition of Fruit is of a remarkable character, and we doubt whether, in some respects, it has been surpassed in any other portion of the world.

We are happy to see again on exhibition the improved implements of agriculture, the importance of which to the farmer can scarcely be over-rated. And what American does not feel a generous pride in the success with which these implements have been crowned at the World's Fair, especially in the triumph of a plough, the invention and manufacture of a member of this society, and which has not only distanced the competition of the world, but has absolutely turned the ridicule of European contributors into universal applause? But while we rejoice in the progress and prosperity of our society, and in the remarkable preservation of the lives and health of our members, let us not forget that the Destroyer has been among us. Three distinguished friends, who were present at our last anniversary, who then participated with us in the priviledges and pleasures of that occasion, have ceased from their earthly labors and entered into their rest. The Hon Asa T. Newhall, Delegate from the Essex society, at whose approaching anniversary no doubt a just tribute will be paid to his memory The venerable John Stewart Skinner, and Gen. Henry Alexander Samuel Dearborn

In the death of these gentlemen, Agriculture has lost powerful champions, and society old and valuable members. With the two latter, it was my privilege to enjoy a long and happy acquaintance. Both were pioneers in agriculture and the rural arts—able, constant, and large contributors to the press—gentlemen of richly endowed and highly cultivated minds—of varied and extensive learning—of lofty and benevolent purposes, and of untiring perseverance.

Mr. Skinner, in addition to numerous offices of trust, emolument, and honor, under the national government, was the editor of the first rgricultural paper ever published in the United States; also, of the Plough, the Loom, and the Anvil; with many other kindred valuable works—all of which, in the language of our sentiment last year, were honor to him while living, and are monuments to his praise now he is gone.

It affords me great pleasure to bear public testimony to the brilliant talents and great worth of our lamented Dearborn—a testimony which is the result of more than twenty years intimate acquaintance with him, in our favorite pursuits and in official duty.

His labors in the establishment of the Massachusetts Horticultural Society, the Mount Auburn and the Forest Hills Cemeteries, are proud and durable memorials of his skill, energy and taste. No enterprise was too bold for him to attempt: no sacrifice was too great for him to make; no labors too arduous for him to perform, in order to promote the intelligence, the refinement, virtue, welfare, and renown of his countrymen.

His eulogy has been spoken by a master hand, and pronounced in its appropriate place. He sleeps in the consecrated ground which his genius planned, and which his taste adorned,—beneath the flowers which his own hand planted."

Answers to Correspondents.

AUTUMN PRUNING.—*B. James.* We do not hesitate to prune small limbs at any time, but north of Philadelphia it is better not to make large wounds just before winter. But if you brush the *shellac mixture* (gum shellac dissolved in alcohol to the consistency of thick varnish) over the wounds, you may prune with safety at any season.

STRAWBERRIES.—*W.*, (Cleveland, O.) The best possible covering for strawberry beds is tan-bark spread evenly over the whole bed, just thick enough to nicely cover the plants. It does not matter whether it is new or old. If you cannot get this, use straw or stable litter.

SCARLET GERANIUMS.—*P. B.*, (Watervliet.) Take them up before frost and set them in long shallow boxes. Keep them moderately dry all winter so as to encourage growth as little as possible, and they will bloom far more abundantly in the beds next season, than if kept growing in the green-house. A warm cellar will carry them through the winter safely, if you have plenty of light in it.

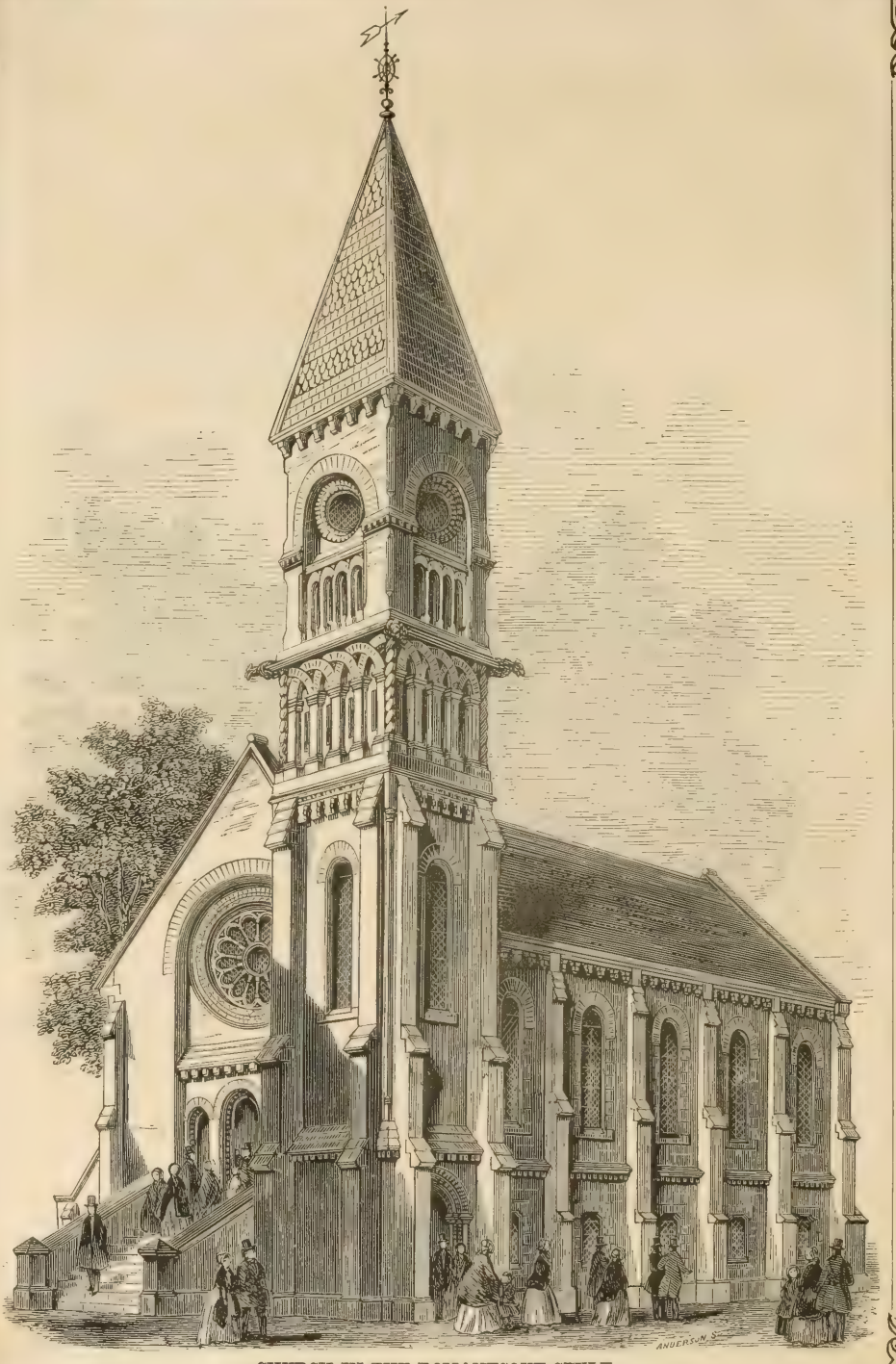
PEARS.—*Pyrus*, (Philadelphia.) The non-productiveness is owing to deficiency in the soil. The best special manure that we have tried for pear trees is the *bone-black* of the sugar refiners—that may be had for a trifle. Mingle it with the soil around the trees, at the rate of a peck for a trunk of the size of your wrist, and two bushels for a large-bearing tree. If your soil is worn out by long culture add ashes and a plentiful supply of stable manure. The Louis

Bonne de Jersey is one of the most regular and plentiful bearers. Doyenne Boussock is large and delicious. Beurre Gris d'Hiver Nouveau is one of the finest new winter pears, melting, high flavored, and a good bearer. (It would be better to call it simply *Gray winter Beurre.*) Lawrence is also a first rate winter pear for the dessert, of native origin. Swan's Egg is—good for nothing. The followlng is the complete list of *best pears* for general cultivation adopted at the two meetings of the Pomological Congress. It may be taken as the results of leading fruit growers' experience, viz: *Early Pears*—Madeleine, Rostiezer, Dearborn's Seedling, Bloodgood, Andrews, Tyson. *Autumn Pears*—Bartlett, Golden Beurre of Bilboa, Buffum, Fondante d'Automne, Seckel, Fulton, Flemish Beauty, Beurre Bosc, Louise Bonne de Jersey, Urbaniste. *Winter Pears*—Winter Nelis, Beurre d' Aremberg. *Fine Pears for particular localities*—White Doyenne (Butter pear or Virgalieu,) Gray Doyenne. *Late cooking Pears*—Vicar of Winkfield, Avedale, St. Germain or Pound. In selecting a site for pears choose an aspect *not* too warm or *southern*, for the direct sun does harm in mid-summer and mid-winter; choose or make a *deep* soil, keep your trees low and bushy, and always protect the roots in summer by mulching the surface of the ground.

Shrubs.—*A Lady Gardener,* (Pittsburgh, Pa.) The best shrubs for small grounds are not those solely remarkable for beauty of blossom or fruit, for these usually last but a few days, but those with good foliage and fine habit of growth. It is better to multiply such, than to have a great variety—merely for the sake of variety—if your object is picturesque embellishment rather than botanical rarity. We recommend to you, as answering this description the following: Virginian Fringe tree (grows 6 or 8 feet,) Venetian Sumac, (10 feet,) Cornelian Cherry, (10 feet,) Purple Strawberry tree, (7 feet,) Oak leaved Hydrangea (3 feet,) Magnolia obovata, (6 feet;) Early white Viburnum, (8 feet;) Rose Weigela, (3 feet;) Rough leaved Deutzia, (4 feet;) Spirea Lindlyeana, (3 feet;) Tartarian bush Honeysuckles, 3 sorts, (3 to 5 feet;) Dwarf Horse Chestnut, (3 feet;) Tree Pæonies, (2½ feet.) Manure your shrubberies by top-dressing them with manure at *this* season of the year—rather than spring, and you will find the advantage of it.

Vines.—*Ibid.* The best woody vines for the trellis of a veranda are the following: Chinese twining Honeysuckle, Yellow trumpet Honeysuckle, Chinese Wistaria, sweet scented Clematis, Tecoma grandiflora and the Virginia creeper. Ivy does better (north of 42° lat.) on the north side of buildings than the south side. The Dutchman's pipe vine is very hardy, with large picturesque foliage and will cover a large trellis or arbor.

Green House Plants.—*M. E. Irwin,* (Southbridge, Mass.) The proper soil for the plants you name—Gardenia Fortunia, Æschynanthus Hrsofieldii, Æ. zebrina, Hoya bella, and Chorizema varium—is the following: one-third pure loam, (say the rotted sods of an old pasture,) one third decomposed manure (old spent hot-beds,) one-third leaf mould from the woods, and add to the whole as much white sand as will make the compost light and porous. The plants may all be grown in a common green house temperature, but all of them, except the Gardenia, should be kept in the warmest part of the green-house, with plenty of light, and watered as often as the soil appears in the least dry. *Florella,* (New-London.) Pot Chinese Primroses in light rich soil—old spent hot-bed mould and silver sand, give them plenty of water and keep them as close to the glass as you can. If you plunge your hyacinths in pots in a hot-bed frame filled with tan-bark, and keep them near the glass, and sprinkle them every day, they will do better there than in the green-house till the weather becomes very frosty. *Olea fragrans* and *Daphne odora* are the two most deliciously scented green-house plants. The former blooms all winter, and has the scent of violets. *Begonia fuchsioides* is as handsome as any Fuchsia in its blossoms, and in a *warm* green-house it blooms almost perpetually. In a cold one it thrives but poorly. The little daisy flowered chrysanthemums with flowers no larger than a daisy, are a great acquisition to the green-house at this season.



CHURCH IN THE ROMANESQUE STYLE.

THE

Horticulturist,

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

The State and Prospects of Horticulture.

A RETROSPECTIVE glance over the journey we have traveled, is often both instructive and encouraging. We not only learn what we have really accomplished, but we are better able to overcome the obstacles that lie in our onward way, by reviewing the difficulties already overcome.

The progress of the last five years in Horticulture, has been a remarkable one in the United States. The rapid increase of population, and the accumulation of capital, has very naturally led to the multiplication of private gardens and country seats, and the planting of orchards and market gardens, to an enormous extent. The facility with which every man may acquire land in this country, naturally leads to the formation of separate and independent homes, and the number of those who are in some degree interested in the culture of the soil is thus every day being added to. The very fact, however, that a large proportion of these little homes are *new* places, and that the expense of building and establishing them is considerable, prevents their owners from doing much more for the first few years, than to secure the more useful and necessary features of the establishment. Hence, the ornamental still appears neglected in our country homes and gardens, generally, as compared with those of the more civilized countries abroad. The shrubs, and flowers, and vines, that embellish almost everywhere, the rural homes of England, are as yet only rarely seen in this country—though in all the older sections of the Union the taste for ornamental gardening is developing itself anew every day. On the other hand, the great facility with which excellent fruits and vegetables are grown in this climate, as compared with the north of Europe, makes our gardens compare most favorably with theirs in respect to these two points. The tables of the people of the United States are more abundantly supplied with peaches and melons, than those of the wealthiest classes abroad—and the display of culinary vegetables of the north of Europe, which is almost confined to the potatoes, peas, French beans, and cauliflowers, makes but a sorry comparison with the

abundant bill of fare within the daily reach of all Americans. The traveller abroad from this side of the Atlantic, learns to value the tomatoes, Indian corn, Lima beans, egg-plants, okra, sweet potatoes, and many other half-tropical products, which the bright sun of his own land offers him in such abundance, with a new relish—and putting these and the delicious fruits, which are so cheaply and abundantly produced, into the scale against the smooth lawns and the deep verdure of Great Britain, he is more than consoled for the superiority of the latter country in these finer elements of mere embellishment.

In the useful branches of gardening, the last ten years have largely increased the culture of all the fine culinary vegetables, and our markets are now almost everywhere abundantly supplied with them. The tomato, the egg plant, salsify, and okra, from being rarities have become almost universally cultivated. The tomato affords a singular illustration of the fact that an article of food not generally relished at first, if its use is founded in its adaptation to the nature of the climate, may speedily come to be considered indispensable to a whole nation. Fifteen years ago it would have been difficult to find this vegetable for sale in five market towns in America. At the present moment, it is grown almost everywhere, and there are hundreds of acres devoted to its culture for the supply of the New-York market alone. We are certain that no people at the present moment, use so large a variety of fine vegetables as the people of the United States. Their culture is so remarkably easy, and the product so abundant.

We have no means of knowing the precise annual value of the products of the orchards of the United States. The Commissioner of Patents, from the statistics in his possession, estimates it at ten millions of dollars. The planting of orchards and fruit-gardens within the last five years has been more than three times as great as in any previous five years, and as soon as these trees come into bearing, the annual value of their products cannot fall short of twenty-five or thirty millions of dollars. American apples are universally admitted to be the finest in the world, and our pippins and Baldwins have taken their place among the regular exports of the country. In five years more we confidently expect to see our fine late pears taking the same rank, and from the great success which has begun to attend their extensive culture in Western New-York, there can be little doubt that that region will come to be considered the centre of the pear culture of this country.

The improvements of the last few years in fruit tree culture have been very great, and are very easily extended. From having been pursued in the most careless and slovenly manner possible, it is now perhaps the best understood of any branch of horticulture in America. The importance of deep trenching, mulching, a correct system of pruning, and the proper manures, have come to be pretty generally acknowledged, so that our horticultural shows, especially, and the larger markets, to a certain extent, begin to show decided evidences of progress in the art of raising good fruits. Our nurserymen and amateurs, after having made trial of hundreds of highly rated foreign sorts, and found but few of them really valuable, are turning their attention to the propagation and dissemination of those really good, and to the increase of the

number mainly by selections from the numerous good native varieties now springing into existence.

The greatest acquisition to the amateur's fruit garden, within the last few years, has been the *cold vinery*,—a cheap glass structure by the aid of which, without any fire heat, the finest foreign grapes can be fully ripened, almost to the extreme northern parts of the union. These vineries have astonishingly multiplied within the last four years, so that instead of being confined to the gardens of the very wealthy, they are now to be found in the environs of all our larger towns—and a necessary accompaniment to every considerable country place. As a matter of luxury, in fruit gardening, they perhaps afford more satisfaction and enjoyment than any other single feature whatever, and the annual value of the grapes, even to the market-gardener, is a very satisfactory interest on the outlay made in the necessary building.

Now that the point is well settled that the foreign grapes cannot be successfully grown without the aid of glass, our most enterprising experimentalists are busy with the production of new hybrid varieties—the product of a cross between the former and our native varieties—which shall give us fine flavor and adaptation to open air culture, and some results lately made public, would lead us to the belief that the desideratum may soon be attained. In the mean time the native grapes, or at least one variety—the Catawba—has taken its rank—no longer disputed—as a fine wine grape—and the hundreds of acres of vineyards which now line the banks of the Ohio, and the rapid sale of their vintages, show conclusively that we can at least make the finest light wines on this side of the Atlantic.

The progress of the art of gardening in this country, considered merely in a useful point of view, is greatly retarded by the want of some school in which native, or at any rate *naturalised* ability, could be developed. Almost all the practical gardeners in America, are foreigners—generally either Irish, Scotch, or German. They bring with them much experience from the mother country; but much of it is of little value in this climate—partly from its great difference to that of the climate of the north of Europe, and partly because they have only learned the routine of practice, and not the principles of the art. Hence we see every day, gardeners, in this country, where the great want is *shade* from the burning sun—pruning trees and plants *to let the sun in*, just as they have been used to do in a moist and foggy climate, where the trouble is to get sun enough to ripen either the wood or fruit. It may be safely said, that half the disappointments in our nicer operations of gardening, arise from this cause. It is, of course, only to be remedied in the main, by the dissemination of sufficient knowledge among the owners of gardens, to enable them to enforce upon the gardener the absolute necessity of remembering that he *must* change his practice with his country. If, as we have before suggested, some one of our large Horticultural Societies would establish an experimental garden, where emigrant gardeners could labor for a certain time, at a nominal sum, where they could learn the necessary changes demanded in the practice by the change of climate, and then go out for higher wages, with the certificate of the society in their pockets, a new era in practical gardening would soon arise. But as yet the Horticultural Societies expend all their energies on annual

shows, and anniversary dinners—which have, indeed, become almost fatiguing from their sameness—without the ambition to achieve any larger field of usefulness.

In ornamental gardening, many and beautiful are the changes of the last few years. Cottages and villas begin to embroider the country in all directions, and the neighborhood of our three or four largest cities begins to vie with the environs of any of the old world capitals in their lovely surroundings of beautiful gardens and grounds. The old and formal style of design, common until within a few years, is almost displaced by a more natural and graceful style of curved lines, and graceful plantations. The taste for ornamental planting has extended so largely, that much as the nurseries have increased, they are not able to meet the demand for rare trees and shrubs—especially evergreens—so that hundreds of thousands of fine species are annually imported from abroad. Though by no means so favorable a climate for lawns as that of England, ours is a far better one for deciduous trees, and our park and pleasure ground scenery, (if we except evergreens,) is marked even now by a greater variety of foliage than one easily finds in any other temperate climate.

A peculiar feature of what may be called the scenery of ornamental grounds in this country, at the present moment is, as we have before remarked, to be found in our rural cemeteries. They vary in size from a few, to three or four hundred acres, and in character from pretty shrubberies and pleasure grounds, to wild sylvan groves, or superb parks and pleasure grounds—laid out and kept in the highest style of the art of landscape gardening. There is nothing in any part of the world which equals in all respects, at the present moment, Greenwood Cemetery, near New-York—though it has many rivals. We may give some idea of the extent and high-keeping of this lovely resting place of the dead, by saying that about three hundred persons were constantly employed in the care, improvement, and preservation of its grounds, this season. The Cemetery of the Evergreens, also near New-York, Mount Auburn at Boston, Laurel Hill at Philadelphia, and the cemeteries of Cincinnati, Albany, Salem, and several others of the larger towns, are scarcely less interesting in many respects—while all have features of interest and beauty peculiar to themselves.

From cemeteries we naturally rise to public parks and gardens. As yet our countrymen have almost entirely over-looked the sanitary value and importance of these breathing places for large cities, or the powerful part which they may be made to play in refining, elevating, and affording enjoyment to the people at large. A more rapid and easy communication with Europe, is, however, beginning to awaken us to a sense of our vast inferiority in this respect, and the inhabitants of our largest cities are beginning to take a lively interest in the appropriation of sufficient space—while space may be obtained, for this beautiful and useful purpose. The government has wisely taken the lead in this movement, by undertaking the improvement, (on a comprehensive plan given by us,) of a large piece of public ground—150 acres or more, lying almost in the heart of Washington. A commencement has been made this season, and we hope the whole may be completed in the course of three or four years. The plan embraces four or five miles of carriage-drive—walks for pedestrians—ponds of water, fountains and statues—picturesque groupings of trees and shrubs, and a complete col-

lection of all the trees that belong to North America. It will, if carried out as it has been undertaken, undoubtedly give a great impetus to the popular taste in landscape-gardening and the culture of ornamental trees; and as the climate of Washington is one peculiarly adapted to this purpose—this national park may be made a sylvan museum such as it would be difficult to equal in beauty and variety in any part of the world.

As a part of the same movement, we must not forget to mention that the city of New-York has been empowered by the State legislature to buy 160 acres of land, admirably situated in the upper part of the city, and improve and embellish it for a public park. A similar feeling is on foot in Philadelphia, where the Gratz estate and the Lemon Hill estate are, we understand, likely to be purchased by the city for this purpose. It is easy to see from these signs of the times, that gardening—both as a practical art and an art of taste—is advancing side by side with the steady and rapid growth of the country—and we congratulate our readers that they live in an age and nation where the whole tendency is so healthful and beautiful, and where man's destiny seems to grow brighter and better every day.

THE TREES OF AMERICA.

BY AN ARBORICULTURIST, PHILADELPHIA.

An arboricultural friend has sent us the following notice of a new edition of Michaux's splendid work on American Forest Trees, and Nuttall's continuation of the same, which we commend to all our readers who would enrich their libraries. Ed.

One of the very best works published on the subject of our beautiful forest trees, a work which, from the accuracy of the engravings, and the beauty of their coloring, has always been found indispensable for the study and identification of specimens, is undoubtedly Michaux's "North American Sylva, or a description of the Forest Trees of the United States, Canada and Nova Scotia." The original edition was published in Paris, and has become extremely rare, and difficult to be obtained; the plates were brought over to this country by the late celebrated patron of science, William Maclure, who, for the benefit of his countrymen, had an edition struck off at New Harmony, Indiana; it was executed, however, so rudely, on such bad paper, and with so many typographical errors, as to be nearly worthless and unsaleable. Knowing the great value of the engravings, Mr. Maclure's brother presented the original copper plates to the late lamented President of the Academy of Sciences at Philadelphia, in whose hands they remained untouched and uninjured several years; himself a devotee of Science, and anxious for its diffusion, he looked round for some person to superintend, and for a publisher to reissue this beautiful and instructive work, in a dress commensurate with its value and utility. A suitable editor was found in Doctor Morton's brother-in-law, Mr. J. Jay Smith, himself a lover and successful planter of these beautiful productions of nature. The plates were retouched where necessary, and this was not often found to be needful; the translation was carefully remoddled, and its numerous errors corrected, and Mr. Smith's son, likewise as a labor of love, undertook the laborious work of superintending the printing, and the still more onerous task of seeing that the coloring was faithfully done by experienced and costly artists. The freshest and best French copies were taken as the main guides, assisted

by living specimens of the leaves and fruits. The result has been the republication in Philadelphia, of this superb work, in three large, handsome octavo volumes; a most valuable gift to the American student it is, and we are happy to be able to say, confidently, that the plates and coloring are in no way inferior to the original, while the text is much improved. The editor, too, has added notes taken from his own extensive experience, and from other writers, and given directions for soil and the cultivation of each species. His notes add value to the work, which has been reduced one-half in price, and thus made accessible to every gentleman's library.

This reduction could never have been made, but for the fact that no charge whatever was made for the use of the plates; had this been the case, MICHAUX would have still been an inaccessible work to the gardener and cultivator; it is now within their reach. The labor necessary to color well so many plates, makes the production of copies a slow process, since few colorists are to be found who will do them justice. Thus far, the sales have been confined to private demand almost entirely; lately, however, a few copies in advance of that demand have been got ready, and are to be procured of Mr. ROBERT P. SMITH, the publisher, Philadelphia, and of Mr. G. P. PUTNAM, New-York.

If praise is to be awarded in no stinted terms to this effort at diffusing accurate information regarding our own trees, we should give further credit for the completion, by the same publisher, of the invaluable continuation of MICHAUX'S great work, by Nuttall, who has taken up the subject where his predecessor left off, and completed our list of American trees in a very handsome and correct manner, with colored lithographic plates, MICHAUX being on copper by the celebrated REDOUTE. NUTTALL'S continuation forms also three superb volumes, embracing the newly discovered trees of California, New Mexico, and Oregon, productions much valued in Europe, and which are now finding their way to our own ornamental plantations. We cannot do better than to transcribe that portion of Mr. SMITH'S preface which alludes to these additional volumes; he says:—

"It was a singular circumstance, and a happy one it has proved for advancing science, that Mr. NUTTALL arrived in this country the very year that the younger MICHAUX left it. From that time he devoted his talents to Botany, and after visiting a large portion of the United States, with an aptitude of observation, a quickness of eye, tact in discrimination, and tenacity of memory, rarely possessed by one man, he published his extended, and most happily executed botanical work, the 'Genera of North American plants.' In 1834 he crossed the Rocky Mountains, and explored the territory of Oregon, and Upper California. With his peculiar qualifications, he prepared the supplement to Michaux's Sylva, in three handsome volumes, corresponding in size with the present, the publication of which, after many delays, was completed in 1849, by my son, in Philadelphia. The two works are now one and homogeneous, the former most highly valued by all lovers of trees, and the latter destined to be equally so, when the fine products of our newly acquired western regions make their way to our gardens and plantations. The frequent references I have made to Mr. NUTTALL'S volumes, will show the reader that his additions to our Sylva, are both extensive and important; inspection will convince him that both authors stand on the highest pedestal of merit."

The editions of both, are very small ones, and may never again appear to be sufficiently remunerative to warrant others; indeed no copies of NUTTALL have yet been prepared for the demand abroad, all that have been ready being required for the home supply; twenty copies, at most, are all that are left. Persons forming their libraries, cannot, therefore, be too early in forwarding their orders. NUTTALL'S work furnishes information not found in any other volumes; it is entirely new, and truly valuable.

STUDIES IN VEGETABLE PHYSIOLOGY—THE ROOT.

BY AUGUSTUS FAHNESTOCK, SYRACUSE, N. Y.

THE third class of plants whose roots are perennial, or live an indefinite number of years, is the largest of the three grand divisions. It comprises all our forest and shade trees, and most of our beautiful flowering plants, and their forms are no less desirable than in the foregoing grand divisions. The most common form of the perennial root is the branching. The roots resemble the branches of a tree, but have no regularity. Some of these branches penetrate the earth to a great depth. Some of them trail horizontally beneath the surface. They do not, as the foregoing, depend upon the stock of the previous year, but annually produce new roots, and form new accumulations, sometimes in separate portions of the root, as in the dahlia or in the Orchis, where, while one or more of such reservoirs is exhausted each year, others are providentially formed for the next years sustenance; and so on from year to year, a portion annually perishing, but the individual plant surviving indefinitely. More commonly, the whole body and main branches of the root are somewhat thickened, or portions of the stem may subserve this purpose, as in all tuberous roots; or the nourishing matter may be widely distributed through the trunk, as in shrubs and trees. Thus far we have only considered the primary root, or that organ which originated in the embyro of the seed at germination. Adventitious buds grow from most stems when placed horizontally on the ground, or buried beneath it, and this is very common to some species; thus the *verbena* is furnished with joints at intervals of several inches each, all of which strike when placed in contact with the soil. "Such roots obey the ordinary tendency of the organ, avoiding the light, and seeking to bury themselves in the soil. Thus when a part of the stem of a plant be cut off at each end, and subjected to the requisite amount of light, heat, and moisture—they will in nine cases out of ten take root. It is in this manner that most green-house shrubs and plants are cultivated. Many plants will emit roots from their leaves. For instance, if the leaf of a Gloxinia or Gesneria be pinned upon the surface of some soil placed in a pot, roots will be seen to issue from the stem in the course of from four to six weeks." To this, as in every other general rule, there are exceptions—as in the case of *aerial roots*. Such plants as the Poison Ivy, (*Rhus toxicodendron*,) Trumpet flower, (*Tecomia radicans*,) &c., emit aerial rootlets from their stems, which fix them to any object which may present itself; in this case the plant draws its nourishment from the soil through its roots, the aerial ones only serving for mechanical support; in this way a plant, in the course of a few years, reaches the tops of the highest trees. There are other plants which produce true aerial roots, which are emitted from the stem, descend to the ground and grow. This phenomena may be observed in our common *Indian corn*, the lower joints of which often send down roots the length of three and four inches; but is more perceptible in the vegetation of a southern climate, where the atmosphere is charged with moisture for a large part of the year. The Pandanus or Screw Pine, forms a good illustration. The roots are emitted from the stem, and fall down, which gives the tree the appearance of having been raised out of the ground. The Banyan also affords another illustration; in this case the roots spring from the horizontal branches, often at a great length from the ground; they then descend, take root, and produce in their turn, plants similar to themselves. This tree grows to an immense size; there is one in the world, which, it is said, is sufficiently large to shelter ten thousand men. The Mangrove is very similar in its habits.

Prof. GRAY says: Its aerial roots spring both from the main trunk, as in the Pandanus,

and from the branches, as in the Banyan. Moreover, this tendency to shoot in the air is shown even in the embryo, which begins to germinate while the pod is yet attached to the parent branch; the radicle, or root end of the embryo, elongating into a slender thread, which often reaches the ground at the height of many yards, before the pod is detached. In this manner the Mangrove forms those immense maritime thickets which abound on low muddy shores within the tropics. There is a class of plants called *Epiphytus* or air plants, which exhibit a further peculiarity. They not only emit roots from every part of their trunks, but during their whole life have no connection with the soil; they are generally found growing upon bark, and the trunks of old trees. The roots adhere to the bark, and fix the plant in a steady position, or else hang loose in the air, from which such plants draw all their nourishment. The parasites are mostly natives of southern regions, such as the orchidaceous plants; many of them adorn our hot-houses, and are rare and interesting objects. Some parasites not only grow upon other plants, but live wholly at their expense, which the epiphytes do not. Parasites may be reduced to two different sorts: first, green parasites, those which have green and proper foliage for respiration and perspiration—and second, those which are destitute of green foliage; they also differ in their degree of parasitism—the great number of them being dependant upon the foster plant for support; but there are a few, such as the *Colutia rosea*, which often take root in the soil, and from thence assimilate a part of their food, and in some cases live and grow independent of their aerial roots. The green parasites are furnished with proper digestive organs of their own, just as in the higher class of flowering plants; they strike their aerial roots through the bark of the plant upon which they grow, and embed themselves in the alburnum, from which they can draw little or no sustenance, except the crude ascending sap, which they must assimilate with their own organs. The Misletoe is always parasitic, being at no time connected with the soil; the seed germinates upon the tree wherever it happens to fall; the germinating root, or the woody mass which it forms resembling the root, penetrates the bark of the foster plant, and forms a close junction apparently, with its young wood, as that of a natural branch. Some species of the Misletoe have no proper green colored foliage, but are of a brown or yellow cast. Pale or colored parasites, such as the Beech drops, strike their roots in the bark of the foster plant, and thence draw their nourishment, already assimilated. Hence they have no use for their proper colored foliage. In some instances, such plants as the Dodder will germinate in the earth, but as soon as they grow large enough they twine around some approximate tree, their aerial rootlets penetrating the epidermis into the bark, and feed upon its nourishment—while its own root dies, and the plant has never any more connection with the soil; thus the plant, like some human ones, steals its nourishment, and requires no proper foliage, for it would not use it if it had it. Such parasites do not live upon all plants, but only upon those which will yield a propitious food. Some, it is said, are restricted to certain species, and others seem to have little or no choice. Their seeds are only germinated when placed in contact with the plant upon which they are to grow. Some parasites may be reduced to a single flower, or flowers, situated immediately upon the foster plant. A truly wonderful instance of this kind is furnished by that vegetable titan, the *Rafflesia arnoldi*, of Summatra. The flower which was first discovered grew upon the stem of a kind of grape-vine; it measured nine feet in circumference, and weighed fifteen pounds. Its color is of light orange, mottled with yellowish white. Some cryptogamous plants, such as the fungi, are parasitic upon languishing vegetables, and some infest living animals; the rest live upon decaying animal and vegetable matter, and are all destitute of clorophyle, (coloring matter.)

AUGUSTUS A. FAHNESTOCK.

RAISING OR HOW TO RAISE THE FINEST STRAWBERRIES.

BY R. G. PARDEE, PALMYRA, N. Y.

The following is *the best* way that I know, of cultivating the strawberry in our favorable soil:

Select, in the early spring, a rich deep mellow, gravelly loam, if possible, in rather low moist ground, with a good exposure to the sun. Then spade it full a spade deep, repeatedly, on the first of every month until July, when the ground will have become thoroughly broken up and mellow, and also the danger of the earth packing and becoming hard, will mainly have past. After breaking up the ground well on the 1st July, and levelling off the soil instead of raising it into beds, then immediately set out the strawberry plants, two in a stool, 18 to 24 inches apart. Then mulch, forthwith, the whole ground, including the walk, with an inch and a-half deep of old tan-bark, saw-dust or well rotted manure; but I would carefully prevent any barn-yard manure, or even ashes, becoming incorporated in the soil previously or at this time. Next I would thoroughly water them, and keep them sufficiently watered to insure a constant and vigorous growth, which is not a task if well mulched. After this, the occasional pulling of a very few weeds, that find their way through the mulching, and a slight coating of leaves and straw on the approach of winter, is all the care I would give them, until the opening of the following spring, when I pursue the following process:

On removing the coating on the opening of spring, I fertilize the plants with a liberal sprinkling of a solution of ¼ lb. each of sulphate of pottassium, glauber salts, and sal soda, and one ounce of muriate ammonia, to eight gallons water, and continue this once in a week or ten days until they blossom, when I give them pure cold water till they ripen, when I discontinue all applications. I do not say my combination of fertilizers cannot be improved, but it proves efficient enough with me until I learn of a better one.

If not couvenient, I do not break up the ground until the 1st July, when I plant out; although I think it better not to allow the ground to be occupied the previous part of the season, and to be frequently stirred. I prefer, all things considered, the 1st to 10th July for planting out, for the reason the soil does not bake so hard as if set out in spring, and at this season I can secure the largest crop next June. If the setting out is delayed till August, I can only depend on half a crop, and only a quarter if delayed till September.

By this plan, it will be seen, I avoid all trouble in forking over the ground in the fall or spring—I do not find it necessary.

Although so many succeed unsatisfactorily in raising strawberries, yet I know of no fruit raised in this climate on which I can, with such confidence, rely for a certain and regular large crop as by this plan, with good varieties—only amateurs who wish to raise remarkably fine fruit may choose to take so much pains as the whole process here laid down involves, yet what is worth doing at all, is generally worth doing well.

I will not presume to say that this plan is perfect, or is the best. Other soils and climate may demand some modification, yet after examining a large number of grounds for years past, and listening to, or reading the mode of procedure of a large number of the most successful cultivators, I have summed them all up, and prefer the above to all others which has come to my knowledge. Every cultivator has his own best way to accomplish the object, and yet, perchance, all have much to learn from the experience or observation of others.

R. G. P.

Palmyra, N. Y., Nov., 1851.

ON THE THEORY OF PRUNING FURIT TREES.

BY LAWRENCE YOUNG, LOUISVILLE, KY.

A. J. DOWNING, Esq.—I have heretofore suggested to you my design of offering through the medium of your columns, to the pomological world, the outline of a rude theory which I have entertained for some years, respecting the existence of two forces or principles in vegetable physiology, and their bearing upon the science of culture, training, and pruning. It has seemed to me that the vague, indistinct, not to say contradictory notions of these forces, to be learned in the books, is a frequent source of injury to the cause of fruit culture at large.

In order to explain the nature of the two forces referred to, and in order to give an example of the manner in which erroneous views of their nature may operate, I shall quote a few authorities setting forth the axiomatic and doctrinal nature of said forces, according to the present state of the science of vegetable physiology.

Four of the best American authors, DOWNING, THOMAS, BARRY and KENRICK, and at least one English writer, LOUDON, agree substantially in setting down to the account of over luxuriance, the cause of unfruitfulness in trees of the orchard or fruit garden—as also in stating that fruitfulness lies in an opposite direction, or at some point towards feebleness not more remote than debility itself. DOWNING asserts that fruitfulness or luxuriance, or rather the causes which lead to their development, are susceptible of being excited, either the one or the other, at the will of the operator, by "difference in the mode of pruning." The others make luxuriant wood growth and fruitfulness two antagonistic extremes, stating in substance that "whatever tends to promote one retards the other." These, and such other of the best authors as I am familiar with, all admit an existence of two tendencies in the condition of a tree, one to fruit-bearing, and one to the making of wood-branches; all agree that fruitfulness lies in an opposite condition from wood formation, but in terms so general that the inexperienced are left to infer that the farther you recede from luxuriance, the nearer one approaches the point of fruitfulness. In fine, high feeeding, in one form or other, is set down as the great agent for exciting the system of wood-buds and starvation, for bringing into activity the fruit bud. Luxuriance and unfruitfulness are used as synonymous terms, and by inference, starvation and fruitfulness seem also to have the same import. My theory of these forces supposes them also to exist in a state of antagonism—that the seat of the wood system is in the trunk, branches and roots, between which there is evidence of a strong sympathy, and of a continued action and reaction—that the fruit-bearing system has no sympathy with the roots, but feeds upon the juices of circulation in the branches, as parasitical plants—that fruit spurs once developed never change their nature, except in consequence of some act of violence, and may multiply like parasitical plants, until their demand upon the juices of circulation even starve out the wood-buds, and finally induce the death of the tree. Fruitfulness I consider a state of normal health in a tree large enough to bear. I think it exhibits the existence of these two forces in a state of equilibrium, and a departure therefrom, towards either extreme—towards luxuriance or feebleness, is a disturbance of the balance of power—the beginning of a state of disease, the nature of which will entirely depend upon the character of the force in predominance, and must call for remedies in accordance; that is, a tree too luxuriant for fruitfulness will need depletions, while a starving subject would want stimulants and tonics.

In giving an example of the manner in which erroneous notions of these forces affect the cultivator, I will suppose one has, as a subject, a tree unfruitful from too great luxuriance. Suppose he should undertake to cure this defect by lessening the number of rootlets catering for the woody system, by root pruning, would it not be absurd philosophy and a waste of time to fill up with rich manures, a trench made for amputating the roots thus enabling the surviving rootlets to gather from a crib, food in quantities, perhaps, equal to the efforts of the whole system from leaner pastures before amputation.

Again, a tree neither too feeble nor too luxuriant for fruit-bearing, ought not to be pruned unless for symmetry's sake—whilst one needing the knife ought to be considered either as too vigorous or too feeble. How confused, then, must the science of pruning be, when its best expounders direct an annual indiscriminate pruning of trees under all conditions, when the admitted effect of that particular mode of pruning too, is to stimulate but one of these forces. Yet such cases are in the books, and one of these cases I will refer to, because the distinguished author who exercises, and I think justly exercises a wide-spread influence over many admiring friends, has in the south and west led some of them into error and disappontment. I would not be understood in this as endeavoring to show off the gentleman's fallibility. I willingly acknowledge myself his debtor for much, both of pleasure and instruction. In fact, I have thought that none other than an inspired member of Pomona's priesthood could have given readings of the laws of nature so generally true to her text-book, as those rendered by the accomplished author of the Fruits and Fruit Trees of America, and I have thought moreover, that high latitude and New-Jersey sand betrayed him into the error alluded to, which is taking the peach tree at three years old, and in March or April of every year during life, shortening-in the branches.

In any cultivated orchard of the Indian corn district, west or south, this treatment is erroneous. It would be wrong, because in such location the tendency of the tree is, at that age, to over luxuriance, and in that case, cutting off the branches to make it less so, would be as though a farmer should attempt to starve out his briars by cutting off their heads in March, when the roots had before them a years supply, instead of the fated August—when they would be in the midst of famine; it would be as though he should attempt to reduce the condition of grazing cattle, by diminishing the number of his herds, or increasing the extent of his fields, or the luxuriance of their verdure.

Without much confidence that my remarks will have much interest, other than that of novelty, I propose to consider the appreciable evidences and outward marks, peculiar to the wood system and the fruit bearing, respectively.

Next to class the rules for growing, training, and pruning in accordance therewith; reviewing also their aptitude, claiming as I do, to be a great admirer of the true and the beautiful in nature—next to the pleasure of weaving fine theories myself, is that of seeing them stript of their flimsiness by others. I should therefore like to be set right in any error perpetrated in the course of these remarks, by any of your numerous correspondents, who shall perceive an error, and at the same time have patience and inclination for the work.

LAWRENCE YOUNG.

Louisville, Ky., Oct., 1851.

REMARKS.—Mr. YOUNG appears to have singularly misunderstood the aim of the shortening-in system of pruning, which we have labored to introduce in this country. The main object of this mode of pruning, is to *prevent the tree from enfeebling itself*—partly by regulating the annual crop and partly by forcing it to push out several luxuriant shoots, where it would otherwise only have made one. To quote the precise language of our work on Fruit Trees—" while we have thus secured against the prevalent evil, an over

crop, we have also provided for the full nourishment of the present year's fruit, *and induced a supply of fruit-bearing shoots throughout the tree, for the next season.*"—p. 459.

It is straining an inference to say that high feeding is the only course for making wood, and starvation for making fruit, pointed out by the best writers. The production of fruit-buds depends upon the formation and deposit of that *organizable matter* which nature directs especially to this end, and not to the end of growth, and though starvation often forces nature, by cutting off rapid growth, to turn all the accumulated energy of the tree into the production of organizable matter, such is not the operation of secretions in the normal and healthy condition of the tree. That condition lies, as Mr. YOUNG truly says, and as we think all sound writers will be found also to say, in an equilibrium of the vital action of the tree. The most skilful pruners of fruit trees in the world, are the French, and whoever has seen the best pyramidal pruned pear trees in France, must have been struck by the perfect balance between healthy growth and productiveness maintained by the admirable system of pruning practiced on those trees. ED.

DESCRIPTION AND CULTURE OF EUROPEAN STRAWBERRIES.

BY JOHN SAUL, WASHINGTON, D. C.

HAVING had considerable experience in the cultivation of all the leading varieties of strawberries in England, I have thought that a few remarks may be useful as well as interesting to the cultivators of this excellent fruit in this country. In my list will be found *none but what I have grown and tested myself.* Climate, soil, and other circumstances effect all fruits more or less, as regards growth, productiveness and flavor, and none more so than the strawberry. I believe it is generally acknowledged that European strawberries do not succeed in this country so well as the American garden seedling varieties—to this there may be some exceptions—and, *vice versa,* the American varieties will not adapt themselves to the murky atmosphere of England, as the natives born of the soil do; as regards size, productiveness, and flavor, they want the bright light and genial heat of their native land. This I had seen conclusively proved by parties on the other side of the water, who had imported the best American varieties; in a word they were miserable, when compared to the splendid kinds they already possessed. I fear it will prove the same with many of the finest English varieties here; they will probably be pronounced *rubbish*—and justly so in this soil and climate—yet I think more of the good English strawberries will be found to succeed in America, than of the American varieties in England. Perhaps I shall be asked why? My reason simply is, in England the great drawback and the great difficulty consists in want of the light and heat which the American fruits require, and which no cultivation, however good, can give them in the open air. Not so in this country; here is plenty of light and heat, and careful cultivation can assist them with other little essentials. However, some may be found useful, while many others deserve a trial.

Of late, many fine varieties have been raised both in this country and England, yet a wide field is open for the raisers of seedlings yet. We have the Chili, a very large but tender variety; why not cross this with some of the hardy high flavored varieties. MYATT, the great English strawberry grower, evidently had this before him when he originated his Eleanor and Mammoth. To all appearance they are crosses from the Chili with some of the Pines. Again, we have the high flavor of the Alpine; why not combine it with the size of a Chili or Pine. Mr. SAUNDERS aimed at this when he produced his Giant Alpine.

Could not the peculiar flavor of the Hautboy be blended with some of the larger kinds I have named. Yet I know not of one attempt to cross this strawberry with any of the other kinds. A little consideration will suggest many other crosses which would be equally valuable—indeed I know of no fruit more capable of improvement than this, fine though it be already.

There are many small and delicious flavored sorts, whose good qualities may be combined with the large size, productiveness, and hardiness of others. This present time some two or three English growers are before the public with new varieties. MYATT advertises one which he names "Cinquefolia," the distinguishing character being its having five leaves on a stalk; if this strawberry is first rate as regards flavor, size and productiveness, it may be useful; on these will its merits depend, as strawberry eaters will care but little whether the leaves which nourished their delicious fruit, had three leaflets or five. These remarks are not penned to lessen the value of Mr. MYATT's fruit, I being well aware there is not a more respectable man in the trade in England, than Mr. MYATT; the strawberries and rhubarb which he has already sent out, are the best guarantee for the future. But I do object to the legion of varieties of all sorts of fruits, and florist's flowers too, which are continually forced upon the public notice; flowers which frequently are but a repetition of older varieties, or differ so little that an ordinary observer could not distinguish them; and fruits, which, if they differ from older ones, in too many instances they are far from equaling them. By all means let seedlings be raised, let new varieties be brought into culture—but as we do the latter let us be convinced that they are superior to older ones—if not superior, most certainly equal, and possessed of other good sterling qualities to recommend them.

In England they know of no such distinction as "*staminates*" and "*pistillates*." There they are all hermaphrodites, if, perhaps, we except the old Hautboys, which are very subject to become sterile. In forcing strawberries, when they are first introduced into too violent a heat, sterility will be the consequence. Why this difference between the strawberries of this country and England? It cannot be over luxuriance of growth, as in England they receive the very highest cultivation; we must look for another cause, which I suspect we shall find in the *climate*. Upon this point, the following excellent remarks from Dr. LINDLEY, will not be out of place:

"Those who would understand the philosophy of strawberry forcing, should begin at the beginning, and first determine what it is they have to deal with. This can only be ascertained by examining the young flower buds as they exist in the plant, when it makes its first move towards growth. At that time they are collections of tiny scales, placed over a small spongy center. By degrees they take on the forms of calyx, corolla, stamens, and pistil. They form successively in the order in which they are named, the calyx first, the pistil last. The calyx and corolla are the most simple, grow the quickest, and most easily bear to be hastened; stamens require more time for growth; the pistil most of all. When high temperature night and day, with abundance of moisture, and as much light as February yields, are suddenly applied to the strawberry, it is compelled to grow, the predetermined parts advance, and, obedient to the influences which their nature cannot disregard, they by degrees unfold; but how? The oldest parts, namely, the calyx and corolla, simple in their structure, and already advanced in their formation, suffer no injury, but appear in their usual state, arraying the blossom in gay apparel of white and green. The next, however, the stamens, having less time to form, acquire perhaps their yellow color, but are powerless for their allotted office; while the pistil, the most complicated of all the parts, that which demands the longest period for its perfect formation, but which is the

latest that the flower produces, and which is to become the fruit, is a mere tuft of abortions, incapable of quickening, and shrivelling into pitch-black threads as soon as it is fully in contact with the air." How true is every word of this! I have, myself, on many occasions, seen strawberries of the most productive kinds, grown in pots, and well established, on being introduced too suddenly into heat early in spring, say from the middle of January to the end of February, become so sterile, that on a couple of hundred of pots there could not have been gathered a dozen of strawberries; the reader must bear in mind that at that period of the year in England, there is very little sun-light, and when this is added to heat, with proportionate moisture, and little air, the cultivator has a magnificent crop of sterile strawberry blooms! Let plants of the same growth and variety be put into the forcing house from the beginning to the end of March, keep them near the glass, with a low temperature to start with, and abundance of air—as the spring is now advancing, even in that dull atmosphere, there is a little more sun-light—a large crop of fine fruit will be the reward of such judicious treatment. Again, the same variety grown in the open air in that country, will produce a splendid crop. This experience, however, only bears out the sensible and philosophic remarks of Dr. LINDLEY, and which, to my mind, is conclusive as to the cause of sterility in strawberries—namely, climate. Strawberries in England, we will suppose, are in the fall, strong and well established, having well formed and well ripened crowns; winter sets in, but it is mild in comparison with its American counterpart; no protection is required by the plants, their foliage is scarcely injured; they remain generally torpid until about the middle of February; the days are beginning to lengthen, and occasionally there is a little sun; the plant, obedient to the call of nature, moves a trifle, though but a trifle, up to the beginning of March; all through March the same proceeds slowly; April generally comes in warmer, with refreshing showers, and from the third week in this month, until about the end of the first week in May, may be considered their blooming season. May is generally a fine month, but not so warm as an American one, the thermometer ranging from 50° to 60° in the shade by day, and sinking at night as low as 40° to 45°; of course, I now speak generally. I have known sharp white frosts as late as the 13th and 14th of the month, and proportionably cold by day—by the end of May the early varieties will be ripening. By taking a retrospective glance, it will be seen that in England their season of growth is long, moderately cool, though never very cold at night—moderately warm by day, the strawberries having time to form the various parts of fructification so well described by Dr. LINDLEY.

Turning to the American seasons, what shall we find? A long, severe winter, during which time our strawberries are reposing beneath a covering of litter and snow—so far so well; spring sets in suddenly warm, and, it may be, dry, and strawberries which were so dormant but a short time before, are quickly in foliage and flower, producing staminates in abundance, and caused by what? the sudden transition from cold to heat, as in the instance of the forced strawberry plants, and were it not for the bright light and sun, the crop would be as scanty as in an English forcing-house, in Dr. LINDLEY'S words—"the oldest parts, namely the calyx and corolla, simple in their structure and already advanced in their formation, suffer no injury." "The stamens, having less time to form, acquire perhaps their yellow color, but are powerless for their allotted office; while the pistil, the most complicated of all the parts, that which demands the largest period for its perfect formation, but which is the latest that the flower produces, and which is to become the fruit, is a mere tuft of abortions, incapable of quickening, and shrivelling into pitch-black threads as soon as it is fully in contact with the air." Has not soil, locality, or season much to do with the character which a strawberry assumes? I think so,

and in support of this, I may name Myatt's British Queen, Deptford Pine and others, which in England are hermaphrodites; in this climate they become staminates. Again I shall suppose A, raises a good seedling which he sells out as a perfect or hermaphrodite bloomer, whichever it may be—B purchases, but, to his great disappointment, finds his plants principally to consist of staminates; he now accuses A of having deceived him as to the real character of the strawberry; when the error lays with himself in planting in too quick or warm a soil or situation, where the sudden transition from the cold of winter to the heat of spring is as sudden as it is warm, and hence the cause of the change.

If soil and situation will cause this change whether more or less, may it not to a considerable extent be counteracted—will not tan-bark, so strongly recommended by Mr. DOWNING as a fertilizer, mulcher, and protection against cold, prove invaluable as a mulcher in early spring—the transition time from winter to spring—keeping the ground cool under the bright beams of a burning sun, allowing the plants to progress more slowly and surely in the formation of the various parts of fructification. Many other ways equally effectual in attaining this desirable end, will suggest themselves to the practical and scientific cultivator.

With this preliminary I proceed to my practical notes on the leading European varieties:

1. *Aberdeen Beehive*—This variety was sent out some two or three years back by a nurseryman near Aberdeen, as an extraordinary new strawberry, for which he modestly charged about 37½ cents, a plant; ten plants came into my hands direct from this *worthy man*, through the post. I had them planted in a well prepared piece of ground, expecting with the returning season to have my eyes dazzled and palate pleased, with the size, beauty, and flavor of this redoubtable variety. Imagine my surprise, when instead of something new and magnificent, I had the "old Grove-end Scarlet," for such it proved to be! Some may suppose there had been an error here, but there was nothing of the sort; every purchaser fared alike—all were deceived—they paid high for the "Old Grove-end Scarlet."

2. *Black Prince*, (*Cuthill's.*)—Sent out by CUTHILL of Camberwell, London, three years ago; he described it as "a fruit of medium size, very dark colored, well flavored, and a first-rate sort for preserving." Other growers in England considered it as *too acid;* after growing it two years and giving it a fair trial, I have come to the following conclusions: 1st. It is the earliest of all strawberries. 2d. It is a prodigious bearer. 3d. If divested of its bloom in spring, it will bear a pretty good crop in the autumn. 4th. Fruit of medium size, long conical, dark colored; flavor, in dull, cloudy, or wet weather, very acid, but in hot dry weather, middling. 5th. It is an admirable forcer, bearing abundant crops in pots. This variety deserves a trial in this country, it being very early and productive; the bright light and heat of this fine climate may improve its flavor. This is not the old Black Prince of the American nurseries, highly spoken of in Mr. Downing's Fruits, as a variety of first rate quality; the latter variety was sent out from England or at least one under this name, about 12 years ago, but it is now nearly, if not quite gone out of cultivation there, (England.) If my memory is correct it was a fruit of good size, round and very dark color; high flavor.

3. *Carolina, Bath Scarlet or Old Pine.*—Of late this fine old fruit is not much cultivated in England, British Queen and similar varieties having displaced it; still there are those who will not discard their old favorite; it is of the richest flavor, a moderate bearer, and requires the best of culture.

4. *Coles' Prolific.*—Raised by COLES of Wellow, near Bath, England. It is "in the way" of Keen's Seedling and Princess Alice Maud, most probably raised from this paren-

tage; color deeper than that of the latter named variety; largest size, conical, and high flavor.

5. *Coul's Late Scarlet.*—This variety has been out some years. Fruit of medium size, deep colored; flavor good; a moderate bearer; may be called a second class variety.

6. *Cox's Seedling.*—Raised from the Elton Pine, but not as good as that fine variety. Fruit large, light-red, very irregular in shape; flavor pretty good, though a little acid; good bearer and very late; this variety so closely resembles the Elton, that it is not worth cultivating where that can be had.

7. *Downton.*—One of Mr. KNIGHT'S seedlings, a very high flavored strawberry. Fruit medium size, very dark colored, ovate; a moderate bearer, which of late has caused it to be rather neglected in England.

8. *Duncan's Seedling.*—This variety was raised from Keen's Seedling, in the neighborhood of Bristol, England. Like that excellent variety, it is of first rate flavor, large size, dark color and good bearer; it is considerably cultivated in that locality.

9. *Elton Pine.*—In England this is considered their finest late strawberry. Fruit of the largest size, light red color, high flavor, but a little inclined to be acid; ovate, and occasionally cockscomb shaped. There is no variety so extensively grown as this in England, for a late crop; to its other good qualities, it adds that of a good bearer.

10. *Giant Alpine.*—Raised from seed by Mr. SAUNDERS, Tedworth, England, from the old Alpine, crossed evidently by one of the Pines; a person unacquainted with its origin would never suppose it had any of the blood of an Alpine in it; as in foliage and habit it agrees with the Pines. From this union we may expect something fine, but in this instance such is not the case; it neither possesses the fine flavor of the Pine, or peculiar flavor of the Alpine, nor a combination of both; in dull weather it is tasteless, but in warm weather and light warm soils, it is rather better; indeed I have known such circumstances, when the flavor may have been considered good. It is a prodigious bearer, throwing up immense bunches of fruit, which are of a fine rich lake color, globular and medium size. I have noticed this much, as it has been recently sold in England at a high price.

11. *Goliath, (Kitley's.)*—This strawberry was brought into notice two or three years since, by the raiser, Mr. J. KITLEY, Bath, England. It is a seedling from British Queen, to all appearance crossed by Elton or Cox's seedling, most probably the latter, as like that variety, it is very irregular in shape and size. As it has been extensively "puffed off," and to my knowledge, immense quantities disposed of at a high price in England, before giving my opinion of its merits, I think I ought to say what opportunities I have had of testing them. In the summer of 1849, (I quote from memory,) Mr. Kitley brought a sample of fruit of this variety to the horticultural establishment to which I was then attached; the fruit was of a rich scarlet color, of large size, (though I had seen British Queens larger,) the flavor was good, though to my palate I had tasted better. A few weeks after this, fifty strong plants were put into my hands by Mr. KITLEY, which he then stated were the first sent out; these I had planted in a well prepared piece of ground—and a good strawberry soil—in the summer of 1850 they bore, and the doubts which I first entertained of this variety, were more than confirmed. Fruit rich scarlet color, very irregular in shape and size, having numbers of small and medium sized fruit with some large ones; and those that were large were most certainiy inferior in size to a good British Queen, and many other large strawberries; its name is therefore a misnomer; flavor decidedly inferior to a British Queen, and inclined to be acid; a pretty good bearer. This variety is as tender, and will require as much care in culture as a British Queen—and is, therefore, not worth cultivating where that fine variety will succeed.

12. *Grove End Scarlet.*—An old variety not much cultivated in England of late. Fruit very small, of a light vermillion color, globular, and early. Being an abundant bearer and rather acid, when cultivated in that country, is generally used for preserving.

13. *Hautboy, Fertilized, (Myatt's.)*—This is the most prolific as well as the largest and finest of the Hautboys; it was raised by Myatt the great strawberry grower,and should be grown by all who admire the peculiar and high flavor of this class of strawberries. Fruit medium size, conical, deep purple in the sun, passing into very light purple in the shade, possessing that fine sweet flavor for which they are noted—a pretty good bearer.

14. *Hautboy, Globe.*—Differs from the above in having globular fruit, of smaller size, and less productive; consequently not worth cultivating when better varieties can be had.

15. *Hautboy, Prolific.*—For a long time considered the best in this class, but it must now give place to Myatt's Fertilized, which is a larger fruit and better bearer; in other respects they are precisely identical.

16. *Hooper's Seedling.*—This variety was sent out by Mr. Myatt about the same time as his Globe, Mammoth, &c., made their appearance. It belongs to the same class as Keen's Seedling and Princess Alice Maud, and has the appearance of a seedling from the latter, but the fruit is more globular, darker in color and later in ripening. Fruit of a deep lake approaching to black when ripe, of high flavor, and excellent bearer. Ripening however, as it does, about the same time as British Queen, Myatt's Globe, and other celebrated varieties, it has never been very extensively cultivated.

17. *Keen's Seedling.*—Perhaps at the present day there is no strawberry more generally cultivated in England than this fine old variety; it is considered too tender for this climate, and it requires care in its culture there. Fruit of large size, round, sometime cockscomb shaped, of a fine rich purplish crimson, and the highest flavor, and good bearer and very early. For strawberry forcing this variety is indispensable.

18. *La Liegoise.*—This variety is of French origin and made its appearance in England about three or four years since; in appearance it is nearer allied to the Roseberry than any variety I know. Fruit medium size, of bright scarlet color, good flavor, very prolific, and one of the earliest. These qualities should recommend it to cultivation, and it is worthy of a trial in this country.

19. *Myatt's British Queen.*—In my remarks on Keen's Seedling, I noticed its extensive cultivation in England, and coequal with it is the culture of this superb variety. Difficult it would be to find a garden in England in which strawberries are cultivated that has not this splendid sort. There never has been a variety originated in Britain equal to this. Fruit of the largest size, roundish and slightly conical, rich scarlet color, and the highest flavor, ripens about medium-season, and an excellent bearer. It is also an admirable forcing variety. For its successful culture it requires a deep loamy soil well enriched; in this climate it should be well protected—I have seen great quantities of it killed by cold and wet in the comparatively mild climate of England.

20. *Myatt's Deptford Pine.*—This variety after several years culture, I consider worthless. It is much hardier than British Queen. Fruit light scarlet, medium size, ovate, a good bearer, but very acid, ripens at mid-season. Can this be the same as what is highly spoken of by excellent cultivators? The plants under my cultivation came direct from Myatt.

21. *Myatt's Eleanor.*—The fruit of this variety is of monstrous size, and looks like a cross between Mammoth and British Queen; if not raised from this source it may have been from the same parent on one side as Mammoth, bringing more of the Pine flavor from the other parent. Persons acquainted with the Chili strawberry may observe con-

siderable traces of it in this variety, blended, however, very much with the color, shape, and flavor of the Pine; it is the best attempt I know to combine immense size with flavor. Fruit very large, crimson scarlet, medium season, an excellent cropper; in dull weather this variety becomes very acid, but in clear warm sunny weather it is of first rate flavor. In this fine climate this strawberry should have a trial.

22. *Myatt's Eliza.*—Sent out about the same time as British Queen, but at present little grown in England, being very much inferior to the latter in productiveness, size and flavor. Can the variety so highly praised by Dr. HULL under this name be correct? Fruit little more than medium size, ovate, deep scarlet color, ripens at mid-season, a middling bearer, and most certainly inferior to the Queen in flavor.

23. *Myatt's Globe.*—If British Queen has a rival in England, this is the one; and after that variety this is the best of Mr. MYATT'S Seedlings. In foliage, size, color and flavor, it resembles the Queen, and most probably is a seedling from it. Fruit of the largest size, globular—though slightly elongated—very regular in shape and size, a good bearer, and no strawberry can excel it in flavor. Here again is a variety which should have a liberal trial.

24. *Myatt's Mammoth.*—This variety is useless save for seeding; crossed with some of the higher flavored fruits the progeny may be good, as flavor would be united to size. In this is a great portion of the Chili blood, which should be mixed with the richest Pine. Fruit the largest of all, roundish, crimson in the sun, in the shade nearly white, flavor bad, nearly tasteless, a shy bearer.

25. *Myatt's Prince Albert.*—Made its appearance about the same time as British Queen; at present it is not much cultivated in England, ripening as it does, when most strawberries are in season, and second to many in size and flavor. Fruit medium size, conical, color a purplish crimson, flavor pretty good though not equal to a British Queen; this is exceedingly prolific—I was about to say the most prolific of strawberries.

26. *Myatt's Pine.*—This delicious old fruit is now little cultivated from its great shyness in producing fruit, other more productive sorts having driven it out of culture. Fruit large, bright scarlet and the highest flavor.

27. *Myatt's Prolific.*—Very much in the way of Prince Albert, maturing its fruit about the same time, but of better flavor. Fruit medium size, deep crimson scarlet, conical, rich flavor, and a prodigious bearer.

28. *Princess Alice Maud.*—Raised from Keen's Seedling by Mr. TROLLOPE of Bath, England; throughout that country it has been extensively disseminated and cultivated, yet in no part has it proved as fine as in its native locality, Bath; here, however, there is naturally a good strawberry soil—a deep rich loam—where nearly all varieties acquire the greatest perfection. It is much hardier than Keen's Seedling, and a better *cropper*, though scarcely as good in flavor. Fruit large, round, purplish crimson, very productive, good flavor and early.

29. *Red Alpine.*—This very old European strawberry, is of extremely easy culture, not being particular as to soil or locality, and invariably productive. They are best raised from seeds, which, if sown early in spring, in pans, placed in a little heat to forward them, pricking off into other pans when large enough, and finally into beds in the open air, when of sufficient size, by autumn they will give a good crop, and the following season bear plentifully. They should be renewed in this way frequently. Fruit small, conical, bright scarlet, with peculiar delicate flavor.

30. *White Alpine.*—Requires the same treatment, and is in every respect similar to the red, save color, which is white.

31. *Rostock.*—An old fruit of the Pine class, not much cultivated of late. Fruit large, round, white; middling flavor and good bearer. The color of its fruit appears to have been its chief recommendation.

32. *Roseberry.*—A pretty scarlet variety, of medium size, and very productive. Fruit ovate; flavor middling; early. Not now much cultivated, larger and better flavored fruit having displaced it.

33. *Swainstone Seedling.*—Originated by the gardener at Swainston, in the Isle of Wight, from Keen's Seedling. In England, of late, its reputation is on the decline. An uncertain bearer. Fruit large, ovate, light crimson, and fine flavor.

34. *Wilmot's Superb.*—This was one of the first attempts made to improve the Chili, and when it made its appearance caused considerable sensation among strawberry growers; it was, however, soon found to be a very poor flavor, and shy bearer, when it soon became neglected. Fruit of the largest size, round, though much inclined to become cockscomb-shaped; deep scarlet color, and ripens about mid-summer.

35. *Wilmot's New Scarlet.*—Like the preceding, not much cultivated of late; from its being a poor bearer, and second in flavor to many others. Fruit large, oval, bright scarlet. Medium season.

Dr. HULL has, in a former No. of this Journal, noticed a fruit called Victoria; the name leads me to suppose it to be English, but I know of no fruit under that name. British Queen has been sometimes sold as such. This present time a variety is advertised by an English grower, under this name. If Dr. HULL'S fruit is English, I have not the least doubt, but that it is a synonym.

In 1850 three new strawberries, or rather *two new* and one old, made their appearance, namely: Myatt's Surprise, Wilmot's Prince Arthur, and La Delicious; the two first are seedlings, and may prove useful, but the last named is an old variety brought into notice under a new name; the parties who paid their $15 per hundred, can by now say in what its superior merits consist.

It has very frequently become my duty to recommend varieties to growers; my advice invariably was cultivate but *few* varieties; for a small garden three sorts are ample, namely, Keen's Seedling, British Queen and Elton; if there is plenty of room, and more variety is desirable, add Cuthill's Black Prince, Princess Alice Maud, and Myatt's Globe, which will be sufficient for the largest garden. This was, of course, for an English soil and climate, and for such there cannot be better than those which I have named. In this country Keen's Seedling and others may not succeed, yet among the remainder something valuable may be found.

To give any cultural remarks on strawberries, may appear a work of supererogation in this country, where this fruit is grown to such an unlimited extent; yet a word or two on the English mode of culture may not be out of place.

The soil best suited for this fruit is a good firm loam, though not of too adhesive a nature, which should be trenched from 2½ to 3 feet in depth, using plenty of good rotten dung. Early in June*—or as soon as the runners are of sufficient strength—select good strong runners with fine bold crowns, and plant them out in rows one foot a part in the row, the weaker grown varieties two feet from row to row, and the strongest growers three feet. Some growers still plant in beds, but in general the best cultivators have abandoned that practice and experience tells me it is not a good one. After planting they should receive frequent waterings until they are thoroughly established, when attention must be given to keep the ground hoed and clean from weeds though the summer and au-

* We prefer making new beds of strawberries in *April*—with the runners of the previous season. ED.

tumn. (In this climate many delicate varieties will require protection in winter.) The following summer will bring an abundant crop. While progressing in growth in spring, keep clean from weeds, and should the weather prove dry, when in bloom and swelling the fruit, water copiously—this should not be scantily, but when done well soak the ground—a few good soakings of liquid manure at this season is of immense value; all this should, however, be withheld as soon as the fruit approaches maturity, as a deterioration in its flavor would be the consequence if persisted in. When the crop is over, if large size and first quality is wanting for the next season, divest the plants of all runners as they appear; but if quantity, not size, is desirable, let all runners occupy the ground between the rows; keep clear of weeds through the summer, and in the autumn give a rich top-dressing of good dung; through winter and following spring, let the routine be as in the the first season; when the fruit now approaches maturity, a magnificent crop will repay the assiduous cultivator. When the second crop is over, the best growers destroy the lot, having a fresh one coming on to take its place. They will, however, bear a third season pretty well, after which they should invariably be destroyed. Strawberries will succeed in different soils and under other circumstances, but if the directions I have given are literally followed, success is certain.

In the present day, this fruit is *forced* to a very great extent, and with what success will be better imagined, when I say I have seen fruit of Keen's Seedling, British Queen and others, as large, if not larger, as high colored and rich flavored, out of the forcing house, as ever I have seen grown in the open air, under the most favorable circumstances. Proceed in this way; in June or sooner, if the runners are strong enough, take your pots (about three inches in diameter,) to the strawberry bed, with some rich light mold; into these lay your strongest runners, one in a pot, see that they have round, bold, well formed crowns—as they bloom better than the long pointed ones; as soon as they have rooted firmly in the pots cut them off, and shift into pots eight or nine inches in diameter, in good turfy loam, mixed with about one-third rotten dung; in the bottoms of the pots put a handful of soot; when potted let them be stood in an open airy situation, but not plunged, as they fill their pots with roots much better when the air circulates about the pots; (in this climate, under the intense heat of a burning sun, they had better be placed in a shady situation, but not under the drip of trees.) Water occasionally with liquid manure, to get them strong and well rooted, as on this will after success depend. As September and October approach, gradually withhold the water, and let them sink into a dormant state. About the middle of the latter month the plants should be stowed away in the following manner. Mark out a piece of ground about thirty inches broad, and of any given length; then lay a row of pots down each side, the plants outwards and the bottoms of the pots towards the center; the space between the pots should be filled with old tan, sand or any similar material, raising it a little above the level of the pots; on this place another row, keeping the rims of these within the rims of the bottom rows; fill with old tan, as in the first case; proceed in this way until there are five or six rows of pots on each side, when it presents the appearance of a ridge; the top is thatched or covered with litter, to throw off rain and keep the roots and plants dry and healthy. In frosty weather dry litter should be thrown over the plants to prevent them becoming frozen, (still more necessary here.) They are also more easy of access, and can be removed into the forcing-house at any time. Many large growers introduce their first batch of plants into the forcing-house the middle of November, which is followed by others every fortnight up to the end of April. But for more moderate growers the beginning of January will be soon enough to commence; on their first introduction keep them cool, near the glass, plenty of air, and a

moist atmosphere, until the plants are in flower, when it should be dry; at this stage the heat by night should never be more than 50°; pass the hand gently over the trusses of bloom, to assist in the diffusion of the pollen. After the fruit is set, the heat may be raised from 60° to 70°; water every alternate watering with liquid manure, while in bloom, and the fruit swelling; when in bloom all the small flowers should be picked off to about six to a truss, and when fairly set these should be reduced to three or four, which will be sufficient to a truss; syringe them frequently, except when in flower; when the least sign of green fly is perceptible, fumigate; as the fruit approaches maturity discontinue water; keep a dry atmosphere, with as much sun-light and air as possible, to enhance flavor. Cuthill's Black Prince, Keen's Seedling, and British Queen, are about the best for this purpose. J. S.

Washington, Nov. 2, 1851.

THE GASES PLANTS FEED UPON.

BY DR. LINDLEY.

PLANTS play a very important part in the economy of the creation; for, independent of their relation to animals as the real source of all food, they are essential to the purity of the air. We are told by chemists, that the composition of the atmosphere is quite constant and uniform; that air, from whatever place it is collected, is always found to consist of the same proportions of oxygen and nitrogen and carbonic acid. This fact has now been established by a number of careful experiments, made by different observers, in various parts of the globe, and extending over a considerable period of time, so that it may in fact be considered as proved, not only that the composition of the air is uniform throughout, but also that it does not undergo any appreciable variation in nature from year to year. There is certainly something very wonderful in this, and indeed it seems difficult to understand how it really can be the case, when we observe the great chemical changes which are at all times going on in the atmosphere, and the enormous quantities of certain substances which are constantly being poured into it in various ways. Night and day all living animals are consuming the oxygen of the air, converting it into carbonic acid, and the same effect is also constantly being produced all over the earth, by fires, furnaces, lamps, candles, and in short by combustion in all its forms. Decay, putrefaction, and fermentation, are also giving rise to the evolution of carbonic acid; and lastly, besides all these sources, immense quantities of the gas in question are evolved from fissures in the earth, especially in what are termed volcanic districts. There are then, to say nothing of smaller or more local causes, at least half a dozen great natural operations, all tending to vitiate the air, diminishing the quantity of oxygen which it contains, and increasing the proportion of carbonic acid. All these causes, we are told, are exactly balanced and neutralised by the decomposing influence of plants, and the wonderful power which they have of absorbing the carbon of carbonic acid. We owe this remarkable fact to the researches of Drs. PRIESTLEY and INGENHOUSZ, extended, repeated, and confirmed by a host of other observers.

In Dr. PRIESTLEY's first experiments on carbonic acid or fixed air, it is evident that he regarded it as highly poisonous to plants; for in the first volume of his very interesting Essays on Air, he says—"Fixed air is presently fatal to vegetable life;" and he goes on to show that plants, in many cases, were very soon killed, when exposed to the influence of carbonic acid gas, collected from the fermenting vat of a brewery; he however observes,

that he did not repeat the experiment with pure carbonic acid artificially prepared, and regrets that he had not yet had leisure to do so. These experiments were repeated and extended by his friend Dr. PERCIVAL, who published an account of his results in HUNTER'S "Surgical Essays." The conclusion to which he arrived, was just the contrary of what might have been expected from Dr. PRIESTLEY'S experiments; for he states, "that fixed air not only retards decay, but actually continues the vegetation of plants, and affords them a pabulum, which is adequate to the support of life and vigor in them for a considerable length of time." So satisfied was he of the truth of this, and the important influence that the discovery would have upon the art of gardening, that he goes on to point out how the florist who is anxious to obtain a prize at some great meeting held for the encouragement of horticulture, might perhaps avail himself of the powers of "fixed air," either to quicken the growth of his plant if still immature, or to preserve it in all its beauty, and retards its decay if fully developed; and he accordingly gives several directions to gardeners who are willing to try the effect of carbonic acid gas on their flowers. Some years before this time, however, Dr. PRIESTLEY had observed that plants grew well in air which had been vitiated by the breathing of animals, and that they soon restored such air to its original state of purity; it seems that he did not at that time very distinctly connect the two phenomena together, for it was not till after Dr. PERCIVAL'S experiments had been published, and after INGENHOUSZ had promulgated his views upon the subject, that carbonic acid began to be regarded as essential to the growth of plants. It is not easy now, neither in fact is it very important, to decide exactly what degree of merit belongs to each of these three philosophers. The experiments of INGENHOUSZ were the most numerous and minute, and his views were the most strongly criticised by contemporary naturalists; at the same time he distinctly states that his experiments arose out of those of Dr. PRIESTLEY.

The circumstance which prevented many observers from believing in the importance of carbonic acid to plants, arose from the fact, that as in nature they are only supplied with it very gradually, and in small quantities, and as their organs are only fitted to absorb it when largely diluted with common air, so when placed in an atmosphere containing a considerable proportion of this gas, they are always more or less injured; and it was difficult to understand how, if carbonic acid in small quantities was food and nourishment, that in rather large quantities it would be hurtful and even poisonous.

Dr. PERCIVAL'S idea of the probable value of carbonic acid as a powerful agent in the hands of a skillful gardener, is one which naturally leads to several interesting considerations, and it has accordingly produced a number of curious experiments, which, though they certainly do not justify his prediction, or, indeed, give much prospect of any really important direct improvement in practical gardening, are nevertheless, very curious and interesting. The primary question of course is, are plants always able to absorb as much carbonic acid from the air as they require, and would benefit be derived by increasing the proportion of it, in the air of a forcing-house for example? When Dr. PRIESTLEY found that pure carbonic acid was hurtful to plants, he next tried mixtures of it with common air, and he found that even one-eighth of it rendered the air poisonous. INGENHOUSZ, after a great number of experiments, and, though quite satisfied that plants really decompose carbonic acid, speaks with great doubt of the effects which it produces when artificially added to the air. He says, "plants grow tolerably well in air to which a small quantity of carbonic acid has been added, especially if they are exposed to the sunshine; sometimes even they seemed to grow all the better for it;" but he adds, "that it is doubtful if this effect was really due to the presence of the carbonic acid." A second, and very

remarkable series of experiments is described by DE SAUSSURE, the result of which showed that the addition of carbonic acid, where more than a tenth was added, always did harm, whilst a twelfth produced a decidedly beneficial effect, if the plants were exposed at the same time to the influence of light; there are, however, unfortunately, several interfering causes in these experiments, which SAUSSURE overlooked, and which diminish their real value. Three years since some valuable observations on this subject were made by Dr. DAUBENY, who conducted a careful series of experiments, with the object of ascertaining what proportion of carbonic acid in the air, healthy plants are able to endure, without inconvenience. The result of his investigations proves that ten per cent of carbonic acid is not at all injurious to plants, and that it is sometime before even rather larger proportions of that gas begin to produce bad effects. Even as much as twenty per cent produced no injury in ten days.

In all considerations of this sort, it is obviously the best way to commence by studying the natural conditions of plants, before we begin to place them in new and unnatural circumstances. In nature, plants are supplied with an almost infinitely small quantity of carbonic acid, and the effect of their growth is to deprive the air which surrounds them of that carbonic acid, and to replace it by an equal volume of oxygen.

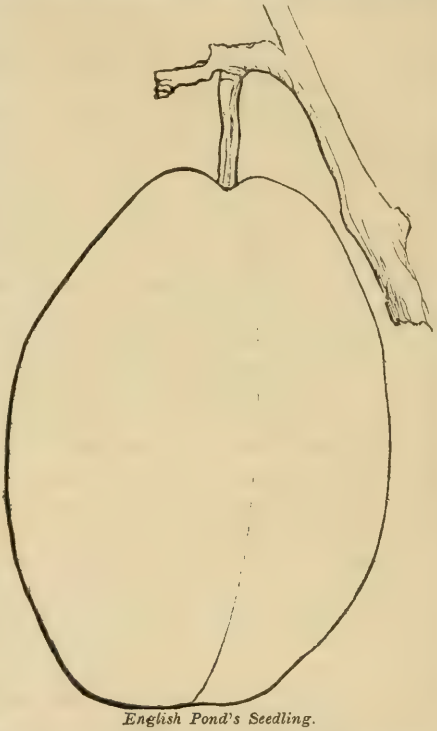
The chief difficulty which exists in comprehending the true bearings of this great fact, depends on the enormous magnitude of the entire atmosphere, and the almost infinitely large quantities which we have to consider. It is easy to form some idea of the quantity of carbonic acid which is produced in a given time on a square mile of the earths's surface, and which the plants growing on it consequently may be supposed to have to decompose in the same period. But it is very difficult to form any just idea of the whole atmosphere, or to comprehend the relation which exists between the bulk of the carbonic acid and that of the entire atmosphere. Large as the former appears to us, and enormous as its quantity is, when compared to the largest tree, yet it is a mere trifle, a thing of very little account, when contrasted with the bulk of the whole atmosphere.

If, for example, we assume, for the mere purpose of comparison, that on an average each human being on the surface of the earth gives out, in the course of twenty-four hours, twenty-four ounces of carbonic acid gas, a proportion probably not very far from the truth, the volume of the gas thus expired would be about twelve and a half cubic feet; and the entire quantity given out during a whole year at this rate, would be 4744 cubic feet of carbonic acid gas; having a weight of about 547 lbs., very nearly a quarter of a ton! If then we go a little further, and calculate what would be the bulk and weight of the quantity of carbonic acid that would be given out by the entire population of the globe, during a whole year, assuming its number to be 600 millions, and supposing that every individual required the same quantity of carbonic acid, we should then arrive at the result of very nearly three million of millions of cubic feet, or 316,266 million cubic yards of carbonic acid. This quantity is so large that it is difficult to conceive any just idea of its real volume, and the consideration is not rendered much simpler, if we reduce it into cubic miles; we then find that it would amount to about 58 cubic miles. On the other hand, if we calculate the weight of such a quantity of carbonic acid, we are are nearly as much bewildered with high numbers, for we find that it amounts to 326,200 million pounds, or 145 million tons! and this, be it remembered, is but a very small portion of the carbonic acid which plants must absorb every year.

NOTICE OF TWO LARGE PLUMS.

BY M. DESPORTES, ANGERS, FRANCE.

1. ENGLISH POND'S SEEDLING.—When I was in your country, two years ago, I paid a visit to Mr. POND'S garden, at Cambridgeport, Boston. I showed him the portfolio which contained the drawings of all the fruits of our collection. He there perceived the name of "Pond's Seedling" Plum. He at once exclaimed that the drawing corresponding to this name was not the genuine variety originated by him; that his Pond's Seedling is smaller, and rounder, and does not in the least resemble ours. Now, as he is the originator of the true Pond's Seedling, I concluded that ours was false. I was confirmed in this opinion when I read the description you give of it in your "*Fruits of America*," page 309. If we have not the American Pond's Seedling, we have the English one, of which the *Revue Horticole*, (our standard fruit gardening Journal) has given a picture and description in the number of March 15th, 1847, page 101. This variety is very different, as you will observe by the sketches in oil which I send you herewith, from the American one.



English Pond's Seedling.

The following is a description of the English Pond's Seedling, taken from a fruit grown in the nurseries of Mr. Andre Leroy, at Angers.

Fruit oval, 2½ inches long, 1½ inches in diameter, slightly uneven about the middle of the length; skin violaceous red, sprinkled with many blue small dots about the stalk; dusted with light gray about the apex; deeper colored on the sunny side, and covered everywhere with a nice whitish blue bloom; stalk half an inch long, slender, set in open cavity; a small suture divides the fruit in two parts, one of which is more swollen than the other; flesh yellowish, thick, juicy, adhering to the stone, slightly acidulous, very pleasant. If it is not first rate, is a good second rate.

This kind is very fertile, and always a constant bearer; very profitable both as a dessert and a cooking one. It is the largest and handsomest plum I know, not excepting the fine Magnum Bonum. It weighs two and a half ounces. It ripens from the end of August to the 1st of September. Tree vigorous grower; the young wood is smooth, gray spotted and dotted; leaves broad, roundish, terminated lanceolate.

[This same plum is known as Pond's Seedling in England, (see Catalogue of London Horticultural Society.) It has, no doubt, occurred by some error in sending out the variety from this country. The question is, what is the true name of this large plum? The

description of the fruit alone would lead us to believe it to be the *Duane's Purple* of American nurseries. The branches of this tree, however, are gray, and the young shoots very downy. M. DESPORTES says gray but smooth. Still we incline to the opinion that it is Duane's Purple. An importation of the tree will settle the question speedily. ED.]

Plum de l'Inde.

2. PLUM DE L'INDE. — We received some years ago, under the above name, the plum of which the description follows: Tree vigorous, with long upright branches; wood smooth, gray dusted; leaves roundish, sometimes lanceolated; thick nerved, having two glands at the base; petiole three-fourths of an inch long.— Fruit large, obovate, larger about one-third of the length, uneven; color violet redish, dotted with some broad gray and coarse spots; dusted with small gray and blue dots, principally about the eye; covered with very nice blue bloom; suture shallow; skin thick; flesh yellow redish, firm, juicy, melting, sweet, rather adhering to the stone. This very handsome plum is a good second rate one, and well deserves an extensive cultivation. It resembles very much our English Pond's Seedling, but it differs from it by its being rounder, and ripening fifteen days later, that is to say, about 15th September; it is also more red.

BAPTISTE DESPORTES.

Angers, (France,) Sept., 1851.

RENOVATING OLD ORCHARDS.

BY W. R. COPPOCK, BUFFALO.

IN a former number of the Horticulturist, I detailed some experiments in progress for rejuvenating an orchard of old apple trees, by trenching, special manuring, and cleansing the bark by scraping, washing, &c. &c., (vide Horticulturist for March last.) Another season's growth has passed, and the results having become so apparent and decisive, I hasten to notice them, for the benefit of others similarly possessed.

These trees are from twenty to twenty-five years old, originally forming a part of a large orchard, now merely divided by a division fence, the general aspect and condition of all being alike. They have now had two season's growth since my applications began, and marvellous are the results.

Not deeming in the onset, the fruit in its varieties, of the least possible value, being extremely small, knotty and bitter, at the same time unrecognisable, and aiming only to make the trees available, I grafted each season, about one-third of the top with choice kinds.

By these processes a thorough metamorphosis has taken place. The growth of both new wood and grafts have been extraordinary, while the foliage which before was small and sickly, and usually fell off at mid-summer, has in every way changed; becoming large, beautifully green and full of vigor, while their neighbors on the other side of the *fence*, untouched by art, and left to nature's skill, are denuded prematurely of their foliage and seared by neglect.

From the impetus given their growth by the stimulating cultivation they have received, the crop in quality—particularly in numbers—this season is but small, while the fruit itself has become entirely changed in all its characteristics. Before, no specimen could be recognized—while now from amid the ruin, we find the *Porter*, Ribstone Pippin, Golden Reinette, Golden Sweeting, Swaar, Twenty Ounce, Detroit Red, and other varieties in the perfection of size, form and color!

From forty trees, some of which bore but a few specimens, thirty barrels of picked fruit have been marketed, reserving some thirty bushels for home use.

Thus while we hear of various persons cutting down old apple orchards and delighting in the blazing fire that does not "*snap*," I feel amply repaid for the expense and labor in the successful experiments I have thus made in the saving of what was deemed useless cumbrances, and producing therefrom a balance fully equal to twenty dollars each.

It is far easier to cut down and despoil a tree, than to replace one. So long as the tree is not radically diseased and rotten, but simply neglected, moss covered, and unpruned—its fruit in the mean time degenerated until all its characteristics of size, form, color, and flavor are changed, such trees may by judicious methods be so restored as not only to be profitable in their own fruit, but as stocks for grafting, forming if desirable entirely new heads.

Already have some of my grafts (two years old) began to bear, while all have taken such start that in a few seasons the whole tops will be blossoming with the Northern Spy, Wagener, Melon, Baldwin and other valuable kinds. Thus assuredly, aside from present pleasure and profit, ten years of time has been gained.

Yours truly, W. R. Coppock.

Longsight Place, near Buffalo, Nov. 17, 1851.

EXPRESSION IN ARCHITECTURE.

FROM THE LONDON BUILDER.—BY H. S.

Some are of opinion that the beauty of the human face consists entirely of expression; and in truth the charm of an agreeable countenance seems to arise from the capability of the features to reveal mental and moral beauty; and if expression be not the entire, it is at least the soul of beauty. Mere sensuous grace is perhaps as unimportant in architecture, which is little else than a lifeless mass if genius infuse not this spirit into it; while if it breathe the idea of the designer we are enchained by its significance and forget the inferiority or the entire absence, as it may be, of abstract beauty. Volumes of thought and feeling flash from the eye, and the various affections of the mind exert an influence upon the permanent form of the countenance and impart to it their own peculiar characteristics: could we have a better illustration of the diversity of sentiment which should beam from different buildings according to the variety of their original and destined purpose?

Certain it is, we can thus express ideas by form: different forms are suggestive by a natural association of different sentiments; and the architect must not so much aim at abstract beauty as at the conditions of the intended expression. If, for instance, the building be for a gay purpose, he must employ those forms and lines, and that style of composition that will express gaiety. If for a solemn purpose, such a character of design, and such proportions, as will yield a solemn aspect. And this gaiety and solemnity are qualities of the destined use or purpose of the work expressed by the features of the building, as qualities of the mind are expressed by the features of the face. Thus rough-hewn and boldly rusticated masonry, harsh angular lines, lofty and unpierced walls, will give the ideas of a prison; prison-like strength, combined with palatial sumptuousness of decoration, will characterise a bank; severity of outline and form, a character grave and solemn, of patriarchal simplicity, in which nothing is hidden, intricate, or but partially told, and the absence of all imaginativeness, will distinguish a justice court.

But architectural qualities must not be confounded with moral or metaphysical qualities. We speak of the "smiling aspect of a building," and "the frowning aspect of a building;" but these are figurative expressions: and when we say a building is grave or gay, or mirthful or solemn, we do it by a metaphor. The building has material qualities; the institution which it enshrines or serves, has moral or mental ones; but it is on the analogy between these two classes of qualities which are naturally associated in the mind, that architecture is dependant for its power of expression. Thus we cannot directly or literally express the mirth or pleasure of a ball-room, or its associated ideas of human beauty and grace; but we can express qualities analogous them,—naturally connected with them,—and will characterize such a building by elegance of form and proportion, graceful lines, softness of light and shadow, and minuteness and delicacy of ornament and detail. The ideas of royalty and power associated with a regal palace, we can only shadow forth by majestic proportions,—by boldness of composition, with which, together with power of light and shade, we secure that dignity which is said to be "the harness of power;" while the idea of earthly dominion finds expression in horizontal composition and wide-spreading dimensions. And what the architect must observe is, that there be an analogical correspondence between the qualities developed by the design and composition of the building, and those emotions of the mind which arise from the contemplation, or belong to the ideas, of its use and destination.

This characterizing of edifices, according to their purpose, is among the highest effects of mind on inanimate matter, and is a more wonderful conversion of stone into "golden visions of thought and feeling," than in sculpture itself, as there is less imitation of nature. It is a source of pleasure, of interest, of edification, of refinement, and a gratification of the innate love of variety.*

The purpose of the entire building should not only be thus expressed, but each ornament should tend to illustrate the nature of the particular part to which it is applied and partake of its general character and relations. From the particular properties of that portion originate the motives of its design and combinations, while the ornaments must

* This love of variety in the human breast requires that dwelling-houses should differ in their character from each other; an arrangement further dictated by the analogy of nature in reference to their occupants. They should express "domestic," all of them, as nature expressed "man" in the form and face of the human subject; but they may do this without being all alike. If architects would free their minds from unnatural shackle and undue precedent, we should have as great variety of houses in our streets as of casts of countenance,—a great relief to our monotonous "town-imprisoned" life. This diversity of aspect, form, and character would not be without its moral effects. A man's love of home, which is the parent of many virtues, would be stronger when his house possessed a proper individuality, a distinct character. When it is different from all other houses and homes, it must make a greater, a stronger impression on his fancy and imagination, and, through them, on his feelings.

be in harmony with the order of architecture and the general expression of the building. As in grammar, a word or phrase must correspond to the genius and received forms of the language; so in architecture, the parts must harmonize with the total,—the main idea of which must illume every part of it.

The subject of expression applies to the inside of a building as well as to the outside. External expression is insufficient; unless the whole be adapted to and indicate its use, within and without: unless the idea of its purpose pervade it, as it were, it is not a true work, and the fact will be sure to betray itself, just as with one who shall endeavor to make his face express what he does not feel. We soon, in any case, detect the look that is "put on." The grand secret of eloquence, it has been said, is to be in earnest; and our buildings will be eloquent if we are sincere and truthful in designing them,—while nothing will give satisfaction that is not *thrilled* with the genuine sentiment.

But the use of each apartment in a house should be indicated for its own sake. The ancients dedicated each chamber to the divinity that presided over the use to which it was applied, and decorated it accordingly. A room decorated, for instance, to mirth and enjoyment was so treated that the ornaments and every object had a tendency to excite pleasing and cheerful thoughts, and promote hilarity. Sleep has its emblems, by which to characterise an apartment devoted to that use. The same may be said of festivity, study, literature, art—all have their emblems or associations by which we may indicate dining-rooms, studies, libraries, galleries of art, &c. For many of these there would be no impropriety in drawing upon the mythology, the Apollo, Morpheus, the Muses, and other beautiful conceptions which might yield us considerable aid in this matter. We do not attach sufficient importance to the embellishment of the interiors of our apartments. Michael Angelo, Raphaelle, and other great artists, it should be remembered, were wall and ceiling painters to their contemporaries. Attention to this subject would secure us more diversity in the interior of our houses—a desirable object. The natural love of variety requires a different form and character of decoration and finish for each apartment, and as much as possible a different view or scene from the windows; a great relief to a confined invalid. This could be done without having Turkish and Indian libraries and boudoirs in an Anglo-classic or Italian house. Chinese drawing-rooms may please children or unthinking persons, but no man of taste could take pleasure in such puerilities. Here it may be observed that, as in the exterior, the appropriate expression and needful variety would be in a great measure gained interiorly, by having the shape and proportion, size and disposition of windows, doors, and other features exactly adapted to the destined purpose of the apartment. This would easily distinguish rooms for pleasure from those for domestic service, as in the latter uniformity has given way to utility, and comfort has been secured, though it may be at the sacrifice of uniformity and other conditions of beauty.

There is a difficulty, I admit, in the characterising of some buildings exteriorly. Obstacles are too often flung in the way of truthful design. Sometimes two different, and almost contrasting, institutions have to be provided for under one roof, rendering suitable expression on the outside of course impossible; as in the case of the Assize Courts and St. George's Hall, Liverpool. Some buildings of single purpose, too, it is difficult to characterise: for a railway station, for instance, it would be hard to define the appropriate style of expression. Yet even here a complete adaptation to its purpose will go far to express its character. A railway being for the transmission of goods and passengers with the greatest possible facility and speed, large sheds are required, large doors both for ingress and egress, gateways for carriages and vehicles of every description,—separate sides

for departure and arrival; and these must, in a great measure, distinguish the terminus. And though we could scarcely say what general style of decoration for such a building should be chosen, or what general form and proportions it should have, beyond what utility would demand, yet in the sculptural embellishments a good deal might be done towards indicating its purpose by means of symbols. Rapid flight, speedy change of place, the annihilation of space and time, the unity and amity of distant places, and other associated ideas, might thus find expression. But the difficulty I have admitted to exist is of less frequent occurrence than is supposed: few buildings are similarly circumstanced to the one I have referred to. An ingenious writer, in a recent work on the principles of architecture, has complained, that to distinguish a clubhouse from a mansion is beyond the power of architecture; a truth we must admit, but without the slightest disparagement to the art. He has overlooked the fact that a clubhouse *is* a mansion only for a larger family, and that architecture is not called upon to make a difference where no difference exists. A clubhouse is not a public, but a private building,—for a private society; where a gentleman can have the comfort and accommodation of a private house, just as a cottage, a villa, or a mansion is for the use of a family; and it *is* as far as the public are concerned a private house, or mansion; and the passing stranger need not know that it is anything else: the expression of "mansion," therefore, is not only what the clubhouse will naturally assume,—it is really the expression it should have.

But almost every building that has a distinct purpose, may have its distinct and corresponding expression,—is susceptible of receiving allegorical or other illustrations of its purpose, so as to indicate that purpose; if, in the first place, it be truthfully adapted, and if the architect has the requisite mastery over the resources of the art. If a Gothic church in its perfection is a petrifaction of religion, a truly designed college will be a similar embodiment of literature; a palace, of royalty; an exchange, of commerce. Beauty, however, is not incompatible with any, even with the needful character of a prison, which may suggest ideas of durance and gloom, yet display general forms and proportions on which æsthetic feeling has been exercised. Guided by analogy,—a natural association of ideas,—we may find abundant means of giving at least a general tone to every edifice, in harmony with its use; among which may be enumerated the arrangement, size, and character, as simple or decorated, of doors and windows: public buildings, not much divided internally,—consisting chiefly of one great apartment for a large assembly of people, such as churches, chapels, public schools, theatres, concert halls, should have large and expansive doors of entrance, which would not only be convenient, but would assist in characterising them, as such doors would be suggestive of the idea of extensive ingress and egress of people. In places of worship in particular, the entrance doors should be prominent, rendered by ornament conspicuous and inviting, and much wider than they generally are, in order to avoid unseemly thronging and disorder, during the discharge of a congregation. Many instances of insufficient means of egress might be cited, causing the exercise of devotion frequently to end with a scene too much resembling a Bartholomew fair. Windows are susceptible of great beauty, great copiousness, and truthfulness, and nice inflexion of significance; but in a religious or other building where a solemn or sublime effect is contemplated or sought to be obtained, windows might with great propriety be omitted, or confined to internal courts or gardens, leaving the exterior effect to those grandest of architectural features—the colonnade and dome. The dome contributes much to palatial dignity, and is expressive of the loftiness and breadth that should characterise great national purposes: having its type in the sublimest of all earthly spectacles—the firmament,—it can never be surpassed by any feature of any style, as an element of grandeur. It

has assuredly never been so applied as to fully exhibit its intrinsic beauty in modern European design.

Towers, though no longer needed for defence, are useful in expression—they signify strength and durability, and may be used to indicate a purpose that is deep-laid in our nature, paramount and indestructible. Colonnades are indispensable to the production of the more elegant and magnificent qualities. Gables, roofs, and chimneys are not to be forgotten or neglected. Every necessary part or feature may become a valuable element of expression and power. Order and style of architecture are means of expression; we are no more bound to one style than to one of the ancient orders of architecture. One is generally better for indicating a given purpose than another. I believe that one indissoluble chain unites all true styles of architecture wherever they have been developed—which are but a harmonious variety of one type. Those who suppose that only the picturesque Tudor will be a favorite in England for domestic purposes, forget the flexibility of the human mind.

Rustication must also be considered as architectural language; and the prohibition of its use would be an unnecessary and irrational limitation of the means of variety and significance. Rustics were much used by the Romans, among whom they were chiefly devoted to the grottoes of the rural deities; and among us they may be made the means of beauty and power. They give vitality to a wall or pier, and are susceptible in themselves of many shades of expression. They secure relief to adjacent pilasters, and give brilliancy, and delicacy, and value—by means of contrast—to the upper portions of edifices, when employed in basements, to which, as they suggest ideas of strength, they are peculiarly fitted. If stones can be put together in a beautiful or expressive manner, and that they can be and have been, none I think will deny, there appears to me no harm in making that manner so prominent as that attention will be drawn to it.

The character of a building depends on the choice of material employed, whether brick or stone; or its description, as texture, color, quality; and its disposition or arrangement. Quality of workmanship is also something towards indicating a building's destination. Character may be modified by the manner of executing details, individual mouldings, and other members. Purely geometrical ornament is expressive and poetic, and presents a wide field for imagination: an advantage of such decoration is, its not being seen elsewhere. We may have forms by drawings upon geometry perfectly unique, that do not exist entire in nature; and a new creation, so to speak, is thus called up—

> —— An independent world,
> Created out of pure intelligence."

All purposes of buildings cannot be expressed by equal beauty. The comprehensiveness of our nature enables us to embrace every shade of character and every phasis of beauty, and fits us to sympathise with truthful manifestation of thought and feeling wherever seen. The arrangement, as well as the choice and design of ornaments, is an important point. Concentration is an element of power, but whether ornament be concentrated on particular and important features, or dispersed over the whole facade, depends upon the invariable laws of composition and design, and the influence of the idea that seeks to be expressed. The two sister arts of Painting and Sculpture, in their higher manifestations, are also among the architect's due resources for characterising his productions; for statuary, bassi relievi, or pictures, when properly applied to the embellishment of architecture, are part of the building, which would be incomplete without them, and therefore they are architectural members or features, in not too broad a view of the art: used as far as they are demanded by the architect to carry out his idea, they are architectural embellishments;

part of the language of the art. Whatever else Painting and Sculpture may claim to be, they are handmaids of architecture: one of their offices is to administer to architecture: they are both something apart from this ministry—something on their own account,—but assuredly that is one of their provinces: they are the architect's auxiliaries, means of expression and power which he has a right to avail himself of, in giving the higher tones of expression to his design. All ceiling, mural, and other paintings introduced into the different apartments of a public edifice,—all sculptured subjects, bassi relievi, or other works, placed interiorly or exteriorly, should be so chosen and adapted as to further set forth its character and purpose; and if they be so chosen, and harmoniously associated with the building, and illustrative of its use, they may, I think, be considered as architectural ornaments; as no less a part of the whole than a modillion or dental of the cornice. Sculpture originated in combination with, and in subordination and subserviency to architecture; and the secret of the great success of the Greeks, as also of the mediæval builders, may be found, I think, in the assistance which each art rendered to the other,—their union for the purpose of giving greater force and significance, like the different organs of life, which, when united, to borrow a simile, expressed the idea no single part could represent.

S. H.

Reviews.

RURAL HOMES, *or Sketches of Houses suited to American Country Life, with original plans, designs, &c.*: By GERVASE WHEELER. (New-York, CHARLES SCRIBNER.)

THE multiplication of books upon Rural Architecture, is, in one sense, a most gratifying aspect of the times—since it shows conclusively the appetite of the public for the beautiful, the tasteful, or at all events, the ornamental in their dwellings. Undeniably, it is a proof of the progress of civilization, this fact, that men desire to raise the character of their homes; and clearly, the rural architecture of the country, is in the full tide of gradual change—we hope amelioration—since every possible *notion* offered by real or false architects, and architectural writers, is embodied into solid shape by some one or other of our countrymen.

Our grown men try experiments with styles of building, with as little *naive* or recklessness, and as little heed as to the consequences, as our young men try experiments in "mint juleps" and "brandy smashes," and we fear the immediate results upon the constitutional taste of the country, in one case, and the constitutional health of the individuals in the other, are pretty much the same—that is to say, both excesses beget a sort of flashy character, not very likely to bear close criticism, either by the canons of taste or morality. The only consolation in the matter is, that we cannot be accused of apathy—in short, we are rapidly acquiring knowledge of the world, and the art of building, determined, like the young man who was reproved by his father for his "fast" style of living —"to see the folly of it for himself!"

We shall do Mr. WHEELER the justice to say, in the outset, that he has produced a very sprightly book on the subject of rural architecture. The volume is eminently readable, abounds with many excellent suggestions, especially as to matters of taste; shows a ready talent for imparting information, and leaves the novice who has perused it, with the impression that architecture is a pleasant sort of accomplishment that may be taught in six easy lessons, and practiced for his own purposes, by almost every country gentleman,

with the same facility as running-hand itself. We are a little inclined, in criticising it more closely, to select as a text, one of the author's own paragraphs, which he throws out, we fear, as the Italians throw sugar plums at the carnival—not expecting you to take them for anything more solid than pleasant jokes.

"Houses—says Mr. WHEELER—may tell very well in advertisements, and speculating builders know how to make them look sweetly pretty upon paper, but, *dear friends*, take care that you thoroughly satisfy yourselves that you can make them homes, before you commit yourselves to a choice that you can afterwards repent."

Amen! we say to this, with all our heart. And now saying Amen, and finding that Mr. WHEELER is an architect who writes not merely as an amateur, since he loses no opportunity to tell us in his preface, and throughout the book, that "as an architect he has mastered the rudiments, technicalities, and theories of the science," we naturally turn from the "sweetly pretty" letter-press of the work, to the more practical consideration of the designs themselves—as suited to "American Country Life."

The Frontispiece—is what the author calls the Homestead, and which he defines as a "house suited to American life, manners, and climate." It is amusing, looking at it in this point of view, to see how transparent is the fiction which covers Mr. WHEELER'S English education. This design is, in the first place, one of the worst examples of that *bastard* style of Elizabethan, which all true architects have pronounced the most debased of all styles. The roof seems to pierce the sky like a wedge—the contorted copings of the gables have the uncomfortable twist of an eel in spasms, and the parapet to the tower is a copy of the absurd whimsicalities common to old English manor-houses of the time of Elizabeth. The deep parapet gutters on the right elevation of this house, are also English features, utterly unsuited to the American climate—and one which, whenever it is adopted here, is the cause of endless leaks and indefinite tinker's bills to the American pocket. The only really American feature in the house, is the broad square veranda which Mr. WHEELER seems to have added to his English design—and that it has been added as an after thought, and not originally composed with the rest of the design, is painfully apparent from its total incongruity—it being, in fact, a broad wing, with a projecting bracketted cornice, and an almost flat roof, tacked on to the steepest roofed edifice, with high parapets and the most meagre of gothic cornices. Oh, Mr. WHEELER! this may be "sweetly pretty," and it may be built for twelve thousand, but it is not a house suited to the American climate.

"A Country House," page 60, is one of the best plans, and most satisfactory and unpretending elevations—but how any architect who has "mastered all the theories and technicalities," could design a veranda so poor and meagre in its cornice and supports as the one shown in this elevation, it is difficult to conceive. Here is, also, the same want of unity of design between the house and the veranda—the former having boldly projecting eaves—the latter looking like a cropped terrier, who is minus ears and tail. The small window over the door in the wing is crowded out of both place and proportion, and no attempt has been made to make it compose properly by adapting its form to the place and purpose it fills.

The Gothic Cottage, p. 72—which the author has built in Connecticut, is, we suppose, another illustration of his talent in designing houses "suited to American country life." Here is a cottage one story high—say 12 feet, with a roof running up as steep and high as possible—say twenty-five feet more, and looking like a tall extinguisher on a short candle. What is the inevitable consequence? Simply this, that all the sleeping rooms in this house are entirely under the roof, and are thereby ten times as hot in our intense summers

as they would be if not under the roof.* In a cool climate like that of England, this nestling under the roof, as a toad nestles under a stone, is snug and comfortable—but woe to the Yankee who builds a "medieval cot" upon this principle, for this climate. "Hot corn and baked pears," we are told, in a certain nursery rhyme, have a tendency to "knock a darkey down stairs," whether from the excess of delight or not, is left to the youthful imagination. But a July night in the cock-loft of one of these garrets of a high peaked English cottage, built in our "diggins," will cause a poor wretch to seek the descending scale of the house with emotions more in harmony with DANTE'S *Inferno*, than what is befitting and comfortable in "American country life."

The "summer lodge" (p. 78) has the merit of being simple and unpretending—but is marked by the same boldness and poverty of detail and composition. The veranda at the side reminds one of CALVIN EDSON the walking skeleton, and the chimneys look as if they had been "sat-down-upon." In the plan, it would be difficult to say why the pretty library, (No. 4,) should be deformed by crowding the fire-place in the corner—when it might as well have been put in the centre of the side wall. The door leading from the hall into the spacious drawing-room opens close to the fire-place—without any necessity for it; and would, if executed according to the plan, utterly spoil the symmetry and proportion of the room.

The "Suburban villa" (p. 107) is a really good design, and the "Southern home" (p. 132) has points of merit: but the "Parsonage house" has the same bold-corniced porch as that we have already noticed, and the plan of the "small southern house," (p. 141) with four rooms of the most ugly and inconvenient shapes, has the fire-place in three of them stuck in the angle or corner of the apartment, in a way inexcusable in any man who has "mastered the theories and technicalities" of his profession.

Mr. WHEELER'S desire to please the American public, and his talents for belle lettres, have led him into the discussion of the varied beauties, principles and theories of the subject, which he treats in a manner by no means new with him, but with suggestions borrowed from the works of native authors who have trodden the same ground more earnestly and truthfully before him. In the main, he presents these principles fairly, and often with point and elegance of expression. But it is entertaining to see how thin is his republican disguise, and how poorly the dress fits him, notwithstanding his ambition to be the model architect of our rural homes. The following extract will explain our meaning. He has been describing, with some gusto, a model *American* village—has already built *the* church and the school-house, and continues the tableau as follows:

"Not far from this might be placed the parsonage—such an one as exhibited in this book:—unobtrusive, solid, and simple, connected with the church by a something which distinguishes it from other dwellings, and yet possessing features in common with the people's homes. Then could come houses of differing size and character; the modest cottage of the working-man, with its gay little garden plot and bright flower bed; the somewhat larger dwelling of the store-keeper, merchant, and professional man; the *great house of the village* with its noble woods and lawns, and everything that can show cultivation thereof by art. The village inn, no flaunting, plate-glass bedizened temple of Bacchus, but a cheerful, spacious traveller's home," &c.

Now we do not deny that this is a "sweetly pretty" picture of a village, but leaving out the "store-keeper's" house, is it not essentially *un*-American? Nay, is it not essentially English? *The* single church, *the* parsonage, the modest cottages of the working-

* For this reason most American architects have, in adapting the English cottage style to this country, introduced a *full* story for the chamber floor instead of the original half story.

men, and, towering above all, "*the great house of the village*, with its noble woods, and lawns," &c. The plain reading of this is, simply an Established Church, a rural peasantry, and a nobleman's seat; instead of the republican features of one of our prettiest country villages—say a New-England village—with its numerous places of worship, its broad avenues of Elms, overshadowing no single great man's house, but many homes, marked by that general diffusion of comfort, independence, and growing taste, which is the characteristic feature of our model villages in this country.

While we owe to foreign architects much that is beautiful and valuable in our public and private edifices in this country, and gladly acknowledge the debt, where it is due to real talent and integrity, we have no toleration of pseudo-architects from abroad, who leave home with too small a smattering of professional knowledge to ensure success at home, and after three or four years of practice in this country—marked by constant proofs of incapacity to understand our people or their wants, undertake to *direct* the popular taste, as if they were thoroughly familiar with our social habits and institutions. Mr. WHEELER is one of this class. His book would lead us to suppose him the most accomplished and most conscientious man in his profession, and, if the reader were an entire stranger, also to believe the writer to be a new world citizen, whose native talents had been developed by large culture in the old world; while in fact, his professional practice has, to our own knowledge,* been such as to leave an impression most unfavorable to the reputation of an architect, everywhere that he has deigned to put into substantial shape any of the "technicalities and theories" that he has "mastered" on the other side of the water.

"I have mentally headed every page"—says Mr. WHEELER in his preface, "with a sentence suggested as a matin and even song to every architect and amateur—Mr. RANKIN'S great maxim, "Until *common sense* finds its way into architecture, *there can be but little hope for it.*"

What will our readers say to a man who writes thus, and then puts *stained glass* into the windows of a *stable* of a gentleman's country seat! And yet this brilliant triumph of *common sense* is the offspring of Mr. WHEELER'S taste and talents in a case where he had *carte blanche* and entire control, in a country seat not a thousand miles from New-York.

While we find much that is instructive and agreeable in this volume of Rural Homes, we must caution our readers that there is little that is *American* about the work, and say in the author's own words, applied to others—they are "sweetly pretty on paper—but *dear friends*, take care that you thoroughly satisfy yourselves that you can make [American] homes of them, before you commit yourselves to a choice you may afterwards repent."

* The fact, that in former works we have published one or two of Mr. Wheeler's designs, must be taken as proof that further acquaintance with the architect and his works, have forced us to abandon our earlier impressions.

Foreign and Miscellaneous Notices.

RURAL LIFE IN HUNGARY.—Messrs. Editors: It was in the beginning of May that I reached a village in the central part of Hungary, lying in the great plain which stretches from the Theiss to the foot of the Carpathians, on the eastern borders. It will be unadvisable, for obvious reasons, for me to give the name of the village more particularly. Suffice it to say it was a town in the very center of the land, entirely inhabited by the *Bauer*, and with no nobleman owning a foot of ground in the limits. It was quite probable I was one of the first travelers—certain the first American—who had ever entered it. It was so far removed from the great routes, that only two or three in the whole population could be found who even spoke German. A better example of a simple Hungarian *village* could not probably be met with in the land. I had reached there, as I traveled every where in the interior of Hungary, in a private carriage from the last gentleman whom I was visiting. This is the universal custom in the country, and is a part of that generous hospitality which comes so strikingly before the stranger, every where in Hungary. It is almost a necessary politeness, as the public conveyances are few, and it is not easy for a stranger to hire others.

I was furished with a letter to the clergymen, and though his German was somewhat limited, he received me with the heartiest welcome, and by the aid of mingled Latin, Hungarian, and gestures, we managed to understand each other moderately well. He entered at once heartily into my design of seeing Hungary—even the country life—and in the afternoon took me on a long walk through the village.

It appears the *Bauer* here had never been, at least for many hundred years, under feudal exactions. Though they were not allowed till 1848 to vote for members of the National Parliament, they had the right to elect their own town-officers, and the only burdens upon them were the duty of military service to the State, and certain light taxes. Under such a system, with their own judges, their own aldermen, and managing independently the affairs of their township, there had grown up a very sturdy, free population in the village. There were no nobles there—no rich landholders, but there was no poverty and no slavishness. As I walked around among them, they seemed to me like *men*—free, independent men—more than any population almost I had ever met.

As I learned afterwards, there are large districts in various parts of Hungary, where the Bauer have enjoyed such free institutions. I had heard that this village was famous for its handsome men, and I found it did not at all belie its reputation. In every part, in our walk, we met tall, vigorous, well-formed men, whom in any other land one would stop to gaze at, though here they are scarcely remarkable. The more I saw of this people here, and also in other parts of Inner Hungary, the more I was struck with the advantages to a nation of a free agricultural life. There was a certain *richness* and heartiness of feeling, a certain manliness in them, such as one would seldom see in a manufacturing class. They came before me like the early patriarchs—simple, dignified men, with a courteous hospitality and a *poetry* too, which we must believe marked those fathers of our race. It was very striking here, in this village, to see middle-aged men with their flowing beards, meeting one another with a kiss. Then the Bauer, wherever we visited, met us with such real courtesy—poured out their best before us, and always insisted on going out even to the last gate, to accompany us. It seems, too, as if their life, on these vast plains, with their herds, so solitary, in the starry nights, and amid such grand scenery—and their pursuits, so often in the free air, had given them a wild, poetic turn, which history shows us to have belonged to the early shepherds and farmers on the Chaldee plains.

No where did Kossuth's poetic eloquence find such a passionate response as among these farming-peasants of the Hungarian plain. His appeals to the great Being who watches over the rights of his creatures, and whom he called the GOD OF HUNGARY, seemed to them to come from some one almost superhuman. As he spoke of freedom, of brotherhood, of the wrongs of their fatherland, and the disgrace of slavery, they answered with tears and with shouts of enthusiasm. Through the villages of Central Hungary there was scarcely a peasant who could grasp scythe or whip, who did not march out at his call to join the Hungarian army.

An agricultural population usually strikes one as inferior to a manufacturing in activity of thought; but this fault does not appear among these farmers of the Hungarian plain. The incessant *political* life and movement, through their whole history, in Hungary, have, beyond anything, educated the people. And one could see that these men had not grown dull or inactive at all in their secluded life.

But especially could you observe the advantage of their pursuits in their full, vigorous, manly forms. It was a pleasure to look at men so healthy, and enjoying such a fullness of life, without too the usual sensuality which accompanies great strength and overflowing health.

Now that I am speaking of this, I would say that I took considerable pains in Hungary to notice the *diet* and *habits of eating* of the people, as connected with this remarkable vigor of

the race, hoping some useful hints might be derived for America on the subject. This seemed more desirable, as there is no country of Europe so resembling our own, or at least the Middle States of our own, in climate. The same extremes of heat and cold; the same sudden, violent changes of temperature; the same clear, stimulating atmosphere, which mark the American climate, and distinguish it from the usual European. There are districts in Hungary which produce the most delicious grapes and melons and peaches in summer, which are buried in snow in winter, precisely like the inland counties some years in New-York. And in traveling over the best part of the land, I might have thought, as far as productions were concerned, I was journeying through the plains of inner New-York or Pennsylvania; the only exception being the *vine*, for the want of which in America I am disposed to think the cause is not to be sought in the climate.

In respect to the habits of the people, the great peculiarity seemed to be their *temperance* in eating and drinking, and at the same time their making of the meals a pleasant social occasion, and not merely a means of filling up the stomachs. When I say they are "temperate," I mean they indulge in no excess; as, in respect to wine-drinking, there is scarcely a man in the land who does not drink the light wine at his dinner and supper. But with the Hungarian the meal-time is a time for social intercourse, when friends meet; or when the children and relatives all gather with the parents, and have almost their only merry, familiar conversation, during the day. They sit a great while at table, and taste of a great variety of dishes, at least among the better classes. Still they are not by any means as hearty *eaters* as the Americans or English. Indeed, to a traveler with a keen appetite, or to one accustomed to the vigorous exploits of the English at the table, the Hungarians seem really abstemious. They make much more use of fruits, and salads, and curious puddings, and the light pure wines, than we of the Anglo Saxon race. Indeed a Hungarian would consider himself in danger of becoming a *sot*, if he should drink every day the strong *brandied* wines which every Englishman has on his table. The English in Hungary too say it is impossible in that clear, oxygenated climate, to keep up their habits of beef-eating and drinking.

The first meal among the Hungarians is taken at seven or eight in the morning, and consists only of a glass of coffee with rich milk, and some meager *cuttings* of cold toast broken up and eaten in the coffee.

This is the universal breakfast for all classes except the poorest Bauer. Between this and the dinner, at one or two, nothing is usually eaten or drank. The dinner, as I have said, is long, with a great variety of dishes, not essentially differing from our own, except that it is lighter, and a greater use is made of light wines. This meal is always followed by a cup of coffee. The only other meal is the supper, at eight o'clock in the evening—a long meal again, with soup, fish, pudding and wine. Tea is very little drank in the land: sugar, and sweetened articles, too, are seldom used.

What especial *theory* of diet to draw from all this, I am at a loss to determine. Still the facts may be useful to some who are investigating the matter. The principal things worthy of imitation, seem to be the moderation and sociability of the meals, and the distance of time at which they are separated—the last being, no doubt, very conducive to health. The principal cause of their vigorous health and well formed bodies must be found, without doubt in their open air pursuits and manly exercises, to which they are all ardently attached. They are a nation of herdsmen and farmers, and are enjoying the benefits of their pursuits.

No account of their habits would be complete without stating that the whole population, from the nobleman and clergyman down to the lowest Bauer on the Puszta, *smoke* incessantly from morning till night.

However, to return to our walk through the village. It was soon noised abroad that an *American* was in the village, and we found everywhere groups of curious gazers at the first man they had seen from the Western World. We called upon the judges of the village,—dignified, gray headed old peasants—and everywhere I heard allusions of thankfulness to the kindness of the Americans to the exiles. One man had a picture and a long account in Hungarian, of the reception of the first Hungarians in New-York. At last, in our rambles, we were overtaken by a large two-seated wicker wagon, with four horses, sent by the village authorities to conduct us around—in the town. Accordingly up we mounted with a "crack" Hungarian driver, in short embroidered jacket, and boots and spurs, on the box, and made the circuit of the town and neighborhood.

Everywhere that we visited, whether at his Majesty's officers, or in the houses of the common people, we heard the same account of burdensome taxation, of stupid legislation by the government. Not a man—even of those who received the Emperor's pay—seemed contented. They declared that the object of the ministry was to completely blot out the last traces of the old independence of Hungary. All their internal municipal constitution, so cheap, so efficient, which they had enjoyed for more than five hundred years, was utterly destroyed. They said the pettiest town officer was appointed by the government—and all the higher officers were either foreigners or such Hungarians as no one had ever respected. Then every possible means was used to squeeze money from them by taxation. They were taxed personally; taxed for their garden; taxed for their house; for the wine; for their tobacco. Every deed drawn up must be on taxed (stamped) paper. Their passports were taxed; their very *permits* to raise taxed tobacco, which they themselves are not

allowed to use, must pay a duty. Then, say they, this all comes at the worst of times, when we are stripped of our property by the war, and when the peasants, especially, have lost millions by the Kossuth notes, which the government, despite its promise, has never yet redeemed, at even a part of their value.

The result of it was, in this village, they all told me, that every man was limiting his liabilities in every possible way to being taxed. The amount of wine made there the next year, would be the least possible which they would want for themselves. In tobacco, from which the Government had expected the greatest revenue, knowing the universal habit of the people, the yield would be the smallest ever known. The law, in regard to the tobacco is so exacting, and the duty so heavy, that it will scarcely repay any farmer to sow the seed. In one district around that village, they said, where formerly were five hundred tobacco plantations, there are not now five! They have made too, a patriotic matter of it, as we did of our *tea-tax*, and the government will probably gain very little revenue from that duty. In the course of our ride a man joined us who was a farmer on the outskirts of the town. He spoke German, and I had a long conversation with him. Though a middle-aged man, with a family in merely comfortable circumstances, his great desire was, he told me privately, to get over to America, and he questioned me a great deal about the expenses, and the best situation for an emigrant, &c., &c. In the course of the conservation I had the curiosity to ask him why he had this plan? He was living comfortably here, and the taxes, though they were burdensome, would not ruin him. It would be a hard thing for him to begin life over again in a new land.

"Yes," he said, "I know it well—and it is like cutting the heart-strings, to break away from the old place here, and from Hungary. But I cannot live here a *slave*. It is not *Hungary* to me, if it is not free. As for the taxes, I could bear them, though they are heavy. But I can't see why, if I am steady and industrious, I should pay the debts of my neighbor when he is a spendthrift. Of course I know that every state must lay taxes to support itself, but why Hungary should pay Austria's six hundred million of debt, I don't see! I shall wait a while, to see if no change comes here, and then, if nothing occurs, old as I am, I will leave the country. My country must be where freedom is."

We rode about to the farms of a great many different persons, and everywhere at once, according to the Hungarian usage, the white and red wines were brought forth, with a flask of mineral water, which they all seem to drink with wine—a water with a strong smack of sulphur and iron. They appeared to consider it such a violation of hospitality if one did not drink that at first, I sipped a little at every house, but finally declined altogether, especially on the score that Americans did not drink wine. At each house, too, as we went away the people took my hand, and wished, almost solemnly, the Hungarian blessing, "*Isten aldjon meg!*" (May God bless you!)

At length, in the evening we stopped, by the urgent invitation of a *Bauer*, at his little house to take supper. I was informed that there were three other places where we were engaged to take supper beside, and that I might as well give myself up, and accordingly with a sense of resignation I followed the others in. The table was soon loaded, and though people were continually coming in and eating and going out, it seemed to make no difference—and dish after dish of good things were set out before us. First came a huge tureen of soup, with little balls floating in it of dough stuffed with hashed liver. Then a preparation of very diminutive chickens, stewed in red pepper. Then one of the genuine Hungarian puddings, of small bits of *batter*, worked and cut till they looked like fragments of leather—all soaked in fat. After this, chickens boiled with rice, and following it a formidable looking pyramid of cakes, such as in Yankee land we call "fritters," except that they were cut into singular shapes, and piled up in a towering mass on the platter. Besides, there figured roast mutton and salad, and veal cutlets, and divers other dishes—some, dishes unmentionable in English, and others with names which I have forgotten. Flasks of white and red wine were brought in every few minutes, and bottles of sulphur-water and iron-water, which the guests seemed to drink even more than the wine.

At the end, the Bauer and his wife handed every person a little tumbler with coffee. The talking was very animated at table, and mostly of America, and the chances for the Hungarians, if they should go there.

Several of the company were government officers, but the same expressions were used there, which one hears everywhere—of the stupidity and oppression of the government, and that the only hope for them was to emigrate to "the free land." At length one of the principal men rose for a toast. He spoke in Hungarian, with a rich, eloquent tone, and they all listened in the deepest silence. I only understood it in part, but as they translated it, it was, that my arrival in the unhappy land seemed ominous of good; that I was one from a nation who had welcomed the Hungarian exiles in their suffering, and had given sympathy to their poor country, and that he would propose the health of two of the statesmen of my country, whom every Hungarian knew, "WEBSTER, or (*Vebster* as they call him,) and FILLMORE!"

I was surprised enough at hearing such a toast in a little Hungarian village, though I found afterwards that very much was known indeed, there, of our country.

Towards the end of the supper, in a pause of the conversation, the wife of our host, a pretty looking, nut-brown peasant woman, came up to me, and kissing my hand, with a look that almost tempted me to kiss her, said something very

sweetly in Hungarian. They all lauged, and translated it for me. It was: "When you go back to your country over the waters, tell Kossuth that none of us will ever forget him—and say that the Hungarian peasant women sent him a God's blessing, and bade him come back soon and save his dear Hungarian Fatherland!"

It appears she believed Kossuth was in America, and it shows one instance, of what I everywhere noticed, the intense love of the peasantry for him, their benefactor and orator. After much lively conversation we broke up, too late, greatly to my relief, for the three other hospitable tables which were awaiting us—and I went to my friend's for the night, not a little interested in these, my first experiences of Hungarian country life. C. L.—*New-York Independent.*

Domestic Notices.

Church in the Romanesque Style.—[See Frontispiece.]—Next to the Gothic style, the Romanesque (or Lombard,) appears better adapted than any other to religious edifices. Though there is, in its lines, less of religious aspiration than in the Gothic, yet it is also equally removed from the level plane of reason which we find in the Greek architecture. There is much, both of beauty and balance, in the curved lines of its arches, and it admits the spire almost as naturally as the Gothic style. Besides this, so far as association is worth anything, it has clearly the advantage of the Gothic style—since the earliest christian churches were all round arched, or Romanesque.

This engraving is a portrait of an Independent Chapel, at Boston, England, designed by Mr. Stephen Lewis, and may afford some hints to the committees of some of our religious societies, looking about for ideas. It is different from most churches in having a spacious basement room on the ground floor, sufficiently elevated to be abundantly lighted and ventilated—in short, as healthful and agreeable as a schoolhouse above ground. This school accommodates 400 boys and girls. The exterior length of the chapel is 62 feet, the width 37 feet 6 inches; the internal length 56 feet 8 inches, the width 32 feet; the hight of side walls from pavement, 31 feet; the height of gables 46 feet; the tower height, 62 feet; the spire and vane 48 feet—or total 110 feet.

This church is built wholly of brick—the mouldings of doors, windows, &c., of moulded brick. The cost was £1,300, (about $6,500.) As moulded brick are now admirably made in this country, (some fine buildings in this style having been erected with them at Providence, R. I.) this mode of building is worthy the attention of those who desire to unite economy with good effect.

The Mildest Climate in the Northern States.—A visit to Newport, Rhode-Island, this season, and a close examination of some of the grounds and gardens there, has convinced us that the popular estimation in which the climate of Newport is held, is based upon sound reasons, and is no popular prejudice. Though Newport is part of the sea-coast range of New-England, its climate is mild and agreeable, to a degree known nowhere else in any of the middle or eastern states. This has not been well explained, but it is probably owing to an elbow of the gulf stream which bends inwards at this point of our coast, and ameliorates the climate for some miles in its neighborhood.

As absolute proof of the mildness of the winters, we may state that in the garden of Mr. Alfred Smith, (the sylvan museum of the island,) we saw in the most flourishing condition, the Evergreen Cypresses of the south of Europe, the Gold Dust tree (*Aucuba japonica,*) the *Arbutus Unedo*, the Portugal Laurel, the English Laurel, and the Chili Pine, (*Araucaria.*) Not one of these plants will stand the winter *well* without any covering elsewhere, (so far as we know,) north of Baltimore. At Newport they appear to grow with the freshness and the depth of verdure, that marks them in England—the finest climate for evergreens; and to carry out the resemblance of Newport to the best parts of England, we may mention also, that the Isabella and Catawba grape scarcely ever ripen in Newport, there not being a sufficiency of hot sunny days there—while the lawns at Newport for the same reason, preserve a softness and depth of verdure which we have

seen nowhere out of Great Britain. In Mr. SMITH'S garden we observed the Deodar Cedar, the Atlas Cedar, the Cryptomeria joponica, all the English Hollies, remarkably luxuriant, and showing none of the signs of having been pinched by winter, which all those, (except the Deodar) often do in our northern pleasure grounds. Many of the grounds surrounding the gentlemen's summer cottages, have been planted lately with quantities of Hollies, Austrian Pines, English Laurels, &c., and Mr. SMITH, who is perfectly conversant with all the gardening experiments of the island, informs us that 250,000 ornamental trees have, to his knowledge, been planted in private grounds in and about Newport, within the last six years. These have partly been procured from American nurseries, but great numbers of evergreens of small size, have been imported from England and France. In ten years more the naked shores of the island will, we hope, be as leafy and beautiful as those of the Isle of Wight—for while many trees that thrive well in the interior will not thrive upon the salt air of Newport—there are many, as we have here pointed out, which the mild and soft climate favors, that will not thrive so well in any other part of the country—for at the south—where the winter temperature is the same, the summers are too hot.

THE SAGE GRAPE—A HUMBUG.—Sir:—In ALLEN'S work on the grape, p. 134, is a description of what he calls, the "Sage grape," which is so highly praised, I was induced to send to Mr. Sage for some plants. He sent me two, for which he charged me $2 each,—and cheap enough at that, if they had been what they were represented to be.

I planted them with care in a rich soil. They soon put out leaves, and immediately I began to suspect that they were nothing more than the common wild grape—so strongly did the leaves resemble those of the latter.

Not feeling inclined to nurse a doubtful quality of vine, I took the precaution a few days since to send to Mr. SAGE for a pound or two of the ripe grapes, in order to test the quality. I have received them, and now send a portion of them to you, that you may pass your judgment upon them. If you agree with me that it is a vile, common wild grape, so Foxy (I think that is the term) as nearly to close the throat after swallowing them, I think you will confer a favor on the readers of the Horticulturist (such as may be tempted to buy the plants by the puff contained in Mr. ALLEN'S book,) by giving the grape its true character. Mr. Sage undoubtedly believes it to be a very superior grape, but I think (and you probably will agree with me,) that he is quite mistaken. Yours, very truly, HENRY SHELDON. *Tarrytown, N. Y., Oct.* 1851.

REMARKS.—The grapes which accompanied this letter from Mr. Sheldon, (one of our most experienced amateurs on the Hudson,) were most undeniably "Fox grapes"—the large light colored variety, as big and as indigestible as bullets. To swallow such a grape requires as much fortitude as would be necessary to take a box of pills at one gulp—and no man who has ever tasted a grape that is a grape would dream of cultivating a vine of this sort after tasting the fruit. Mr. SAGE should be "sat upon," as DICKENS says, not by the coroner, perhaps, but by a committee of the nearest Horticultural Society, and have Black Hamburghs administered to him every fifteen minutes till he awakens to a consciousness of the flavor and quality of a real table grape. ED.

THE COLOR OF FLOWERS.—Mr. Dowing:—There are some peculiarities belonging to blue flowers which I have not noticed to have been observed by others, or if observed, I do not recollect to have seen them published. Should you think the following remarks sufficiently interesting, they are at your service. One of those peculiar traits, is, that a large majority of our native plants bearing blue flowers, bloom either early in the spring months or late in the autumn or fall months. Let any one take the trouble to make out a list of the flowers as they begin to bloom in the months of March or April, as the locality north or south will require, and continue it through the summer and fall to November, he will be surprised at the large number of blue flowers in the spring and autumn months, and the small proportion, relative to other colors, during the summer. The true cause of this peculiarity I will not presume to give, but would suggest the inquiry, does the density of the atmosphere at these periods have any influence in producing this phenomena? Do blue flowers require, and consume more oxygen

than those of other colors? We see that whenever we bruise the petals or express the juice from the petals of red flowers, and expose it to the atmosphere, it changes to a blue color; is this change of color caused by the absorption of oxygen? If so, may not plants consume a greater quantity at the seasons above alluded to, than when in a more rarified state? Or does the intensity of the solar rays alone cause a redundancy of the brighter colored flowers during the summer months.

Another peculiarity is, that blue flowering plants in their native state, are much more frequently found growing in moist shaded situations, than in more exposed or sunny spots. There are several plants whose color can be changed from pale red to blue, by employing swamp mould, and keeping them in the shade, more especially among those that bloom early in the spring. By pursuing the hints thus thrown out by the Creator, can we not be led to try the experiment of producing blue flowers upon plants that now uniformly bear those of other colors. Probably they would require to be carried through several generations before their present habits would give way to this artificial treatment. I have very little doubt of success if the experiments were persevered in.

The peculiarities are so palpable and distinct, that if upon experiment the foregoing suggestions should be found to be true either in whole or part, by any person who may have more leisure than your humble servant to try them, I shall be amply repaid for the time employed in writing this fugitive article. J. Van Buren. *Clarksville, Geo., Oct.* 17, 1851.

Answers to Correspondents.

Protecting Roses and Carnations.—*M. Wood,* (Pittsburgh.) The hardier China roses, such as Bourbon, Noisettes, &c, will be sufficiently protected by bending down the tops and covering them with straw, cornstalks,—or what is much better, branches of evergreens. Cover Tea roses with a little mound of tan bark—and turn a box over the tan to keep the *wet* out. Carnations and picotees, if they have been left in the beds—may be carried through the winter by turning a flat box over the bed—so as to cover all the plants. Raise the box about an inch or two on the *north* side, by a stone under its edge, and stick down a guard of small sticks all along the open edge, close enough to keep out the mice, but not so close as to keep out the air. Do not touch or remove the box till the spring fairly opens. This is the simplest and best mode.

Insects in the Ground.—*Peter Wall.* ' If you will take the trouble to throw up the soil into ridges under your plum and apple trees—now—before winter—extending the operation as far as the roots go, you will, by the help of Jack Frost, destroy a large part of the curculios and other insects that have taken lodgings there for the winter.

Evergrens.—*B. P.,* (Cayuga.) If you can remove evergreens with balls of earth about the roots, winter is the very best time. If you have to loose the earth from the roots, then wait till the trees *begin to start* in the spring—for that is much the best time under the latter circumstances.

Tiger Flowers.—*Jas. Culver,* (Royalton.) Sow the seeds in a pot in February, if you have a green-house, or in March if you have a hot-bed. They will come up in a fortnight and flower the next year. There can be no doubt that beautiful hybrids may be raised between *Tigridia conchiflora* and *T. pavonia.* The roots of Tiger flowers are such tempting morsels to mice, that you must keep them buried in sand or shut up in a box, as well as out of the reach of frost, or you will lose them.

Tan-bark.—*W. Jones,* (New-York.) There is no better covering for beds or bulbs, (such as hyacinths, and tulips, Ranunculus, &c.,) tender herbaceous plants, &c., than tan laid over the top of the ground a couple of inches thick. A coat of this thickness should be laid over all strawberry beds in parts of the country where the winter frosts are severe upon them. And asparagus beds are much benefited by the same treatment.

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