ILLUSTRATIONS.

Drawn from Nature by Max Rosenthal.

Lith. by L. N. Rosenthal.

CALLICARPA CŒRULEA.

DRAWN ON STONE EXPRESSLY FOR THE GARDENER'S MONTHLY

THE
GARDENER'S MONTHLY.
DEVOTED TO
Horticulture, Arboriculture, Botany & Rural Affairs.

THOMAS MEEHAN, Editor.
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Hints for January.

FLOWER-GARDEN AND PLEASURE-GROUND.

1862 is now upon us, and we are fairly expelled from the joys and pleasures which our last year's garden afforded us; yet, like Eve, we cannot refrain from reflecting on the glories of the past, and we part with regret from the many floral ties that bound us to them. With her we also may exclaim—

> "Oh, flowers!
> My early visitation, and my last
> At even, which I had bred up with my tender hand
> From the first opening bud, and gave ye names;
> Who now shall rear ye to the sun, or rank
> Your tribes, and water them from the ambrosial fount."

But yet it is useless nursing regrets for our Paradise Lost. Better to look forward to the next we may be permitted to regain, and with the wisdom gleaned from past experience, it may be more than all the rest has been to us.

So we will prepare at once for our new state of gardening existence, and we would again impress on our readers' attention the great interest a few changes in the minor details of arrangement give to a garden. So many new and useful hints for flower-garden details have appeared through our last year's volume, that our readers will, many of them, be prepared at once with plans of improvement. Ribbon flower-beds, peculiar for massing, improved forms of flower-beds, or their change of position to other parts of the lawn or grounds; the introduction of vases, arbors or trellises for climbing vines,—adding a clump of shrubbery here, or removing one there. All these and many other hints for improvement which we have suggested in our pages should now be reviewed, and put into shape for execution the moment the approaching season favors. No matter how small the flower-garden may be, the aim should be to improve as we go, and make each season's garden look better than the last. We never see a "finished place," but we know instinctively that the owners take no pleasure in it. Such parties feel they must "keep up appearances;" duty requires them to "look tidy," and family honor demands that some "pride be taken in the place." Hence the money must be spent,—not exactly grudgingly, but yet with a species of wish that their position in society would demand less of them. We know from the experiences of various parties who have been "reformed from the error" of this way, that a desire to improve, gives the owner of the oldest and most stately establishment a pleasure in its management, which it is almost impossible for him to conceive at the outset.

The actual operations in this department will be confined to preparing soils, manures and other items, for early spring work.

FORCING FLOWERS, FRUITS AND VEGETABLES.

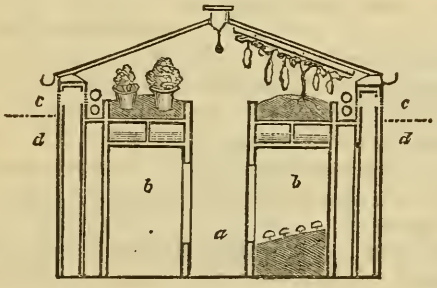
No one who has ever attempted this department of gardening, ever abandoned it that we know, and this shows the real gratification it affords. We have frequently noticed that the idea of forcing is essentially a part of the notion of gardening that citizens fresh in the country bring with them. "Here I intend to have my lawn, there my stables, there my vegetable-garden, and along that line will be a fine place for my hotbeds and forcing pits." Sometimes these never get beyond a few six feet sashes; but that does not spoil the young idea, and it should be, by all means, encouraged to shoot by those whose province it is to teach the art to these new beginners in rural life.

We give below a description and cut from an

English source of a very complete and cheap house for early forcing. We would, however, remark, that the white pine tanks described in our last volume, and costing only about one dollar per running foot, is far better than the slate tanks recommended in the article; and any kind of cheap boiler would do as well as the pattern named.

"THE AMATEUR'S PIT."

"The following description of an economical erection, which I have named the Amateur's Pit, will, perhaps, prove of service to many of your readers. Having had one put up two years ago, I can only say that it has fully answered my requirements, and no doubt will be found to answer those of others, who, like myself, are obliged to content themselves with an humble structure of this kind. With the assistance of a pit heated by hot water, even of limited dimensions, much may be done and contributed to the enjoyment of its possessor, not only in flowers, but fruits and vegetables. The following cut represents an end section of the pit, which is eight feet wide, inside measurement, and



seven feet high. *a* is the path with a door at one end; *b b* are hollow spaces formed by the walls supporting the beds of soil, and tanks for bottom-heat. In these spaces beds may also be formed for forcing sea-kale and rhubarb in winter, as well as mushrooms in summer. They have wooden shutters in front, opening upwards with hinges. Over these spaces are securely-jointed slate tanks for hot water, in order to afford bottom-heat as aforesaid, whilst round each side there are 2½-inch pipes for giving atmospheric heat by the same means. The lower pipe on each side is in a cemented gutter, which, by turning taps, may be filled with water for affording moist heat when required. *c c* are apertures, closing with shutters, for regulating the admission of air, which is warmed in cold weather by passing over and close to the pipes; from thence it passes out at the top, where ventilation is provided by two narrow wooden shutters on each side of the ridge, which can be readily and equally opened by pulling a cord. *d d* shows the ground line, beneath which my pit is sunk five feet. The roof is a fixture, glazed from end to end, and has trellises at regular distances, to which cucumbers, melons, &c., may be trained. It might be objected that, being constructed without moveable lights, the ventilation would not be sufficient. In practice I do not find it so, however. On the most necessary occasions, the door, as well as the side apertures and ridge on the roof, being left open, gives quite sufficient air.

"The boiler I would recommend for heating this pit is Monro's Cannon Boiler. I use one of the smallest size, which is quite sufficient for my purpose, costs a mere trifle, is very economical in use, and is not liable to get out of order. My pipes are so arranged that the tanks for bottom-heat may be turned on or off, as occasion may require.

"Such a pit, measuring from fifteen to twenty feet long, will be found well adapted for cucumbers and melons, for growing young plants in pots, raising annuals, forcing potatoes, strawberries, French beans, salads, mushrooms, asparagus, sea-kale, or rhubarb, as well as for striking cuttings and for many other purposes, to which I need not now allude more at length. Before putting up a pit of this kind, unless the situation be naturally dry, suitable provision should be made for carrying off the moisture."

GREENHOUSES AND PLANT CABINETS.

FERNERIES are now so deservedly popular, that we must have a word to say for them at times, though their management is so simple, there is little one can say. It is probably their ease of management, and the great results obtained for the little outlay of care, that has rendered them so popular. It should not, however, be forgotten that the cases in which they are enclosed is not to keep out the air, but to keep in the moisture, as ferns will not thrive in the dry atmosphere of heated rooms. A few minutes' airing every day will, therefore, be of great benefit to them. Decayed wood, (not pine,) mixed with about half its bulk of fibrous soil of any kind, and a very small proportion (say a tenth of the bulk) of well-rotted stable-manure, makes a good compost. Most kinds particularly like well-drained pots. This is usually effected by filling a third of the pots in which the ferns are to grow with old pots broken in pieces of about half an inch square, on which a thin layer of moss is placed, before filling the pots, to keep out the soil from choking the drainage.

Many very pretty ferneries are made up entirely

of native ferns, some species of which are within the reach of every one. Of the exotic ones, however, that are now general in most florists' establishments, and are remarkable for their elegance and beauty, we may name Selaginellas (formerly Lycopodiums) S. stolonifera, S. densa, S. Mertensii, S. denticulata, S. cordifolia, S. flabellaris; Adiantum concinnum, A. pubescens, A. cuneatum; Pteris longifolia, P. serrulata, P. hastata; Polypodium Sieboldii, P. glaucum; Doodia caudata, Gymnogramma chrysophylla, Platyloma rotundifolia, Nothoclæna nivea, Pteris geraniifolia, Hemionitis palmata. This will form a good and easily obtained collection to commence with. Ferns are easily raised from seed. Shallow pans of very sandy soil should be procured and filled within an inch of the rim. The seed, which is obtained from the brown lines or spots (called, by botanists, Sporangia) on the under surface of most mature fronds, should be sown on the surface of the soil, well watered with a very fine rose, window-glass placed closely over the pans, to keep in the moisture and keep out small insects, and the pans themselves set in a heat of about 55°, when the spores will germinate in about two months.

In managing other plants, where there are several plants or varieties of one species, and command of different temperatures, it is a common plan to bring some forward a few weeks earlier than others in the higher heat, thus lengthening the season of bloom. This applies particularly to camellias and azaleas; the former are, however, not so easily forced as the latter, being liable to drop their buds, unless care be taken to regulate the increased temperature gradually.

Roses, when they are forced, do much better when the pots are plunged in some damp material. When no better plan offers, they may be set inside of a larger pot, with moss between the space around. All plants that come into flower through winter should have those positions afforded them that have the most sunlight, especially the early morning light. There are several winter-blooming plants new the past season, that will be sought after for next year. We name particularly Heterocentron roseum and H. album (before noticed in our pages) as likely to be two of the most in demand and valuable.

There is a plan of making some plants bloom very early, that is not generally known, namely, by pruning them. There are two classes of flowering plants,—one perfects its buds on the wood of the past season's growth; the other flowers on the new growth of the present season. Whenever you want the latter class to flower, all that is necessary is to prune the plant in closely and induce a new growth. This is frequently practiced with roses to get a fine fall bloom, but is not often done with house-plants, though the principle and advantages of the practice are, in both instances, the same. Watering of pot-plants should be always done as early in the morning as possible, and the water be as warm or warmer than the temperature of the house.

It is better to keep in heat in cold weather by covering, where possible, than to allow it to escape, calculating to make it good by fire-heat, which is, at best, but a necessary evil. Where bloom is in demand, nothing less than 55° will accomplish the object; though much above that is not desirable, except for tropical hot-house plants. Where these plants are obliged to be wintered in a common greenhouse, they should be kept rather dry, and not encouraged much to grow, or they may rot away.

Daphnes like a cool, humid atmosphere, and are very impatient of heat. The best we ever saw were grown by a farmer's wife, who had an old spring-house converted into a greenhouse to preserve her oranges, oleanders and daphnes over the winter. The natural heat from the spring was quite sufficient to keep out frost, and it was surprising how charmingly the plants throve in this, to a gardener, rough-looking plant-case.

Where the air is dry, if rooms or greenhouses, frequent syringings are of much benefit to plants. Besides, cleanliness keeps down insects and checks diseases in plants as in animals. Most old-fashioned lady gardeners (and may we ever bless them for the many lessons they have taught us!) take every opportunity to set their window-plants out of doors whenever a warm shower happens to occur. In winter a rain at a temperature of 40° or 45°, which often occurs, might be called a "warm shower." Cold water does not have half the injurious effect on plants that cold air has. When plants get accidentally frozen, the best remedy in the world is to dip them at once in cold water and set them in the shade to thaw.

After cyclamens have done blooming, it is usual, at this season, to dry them off; but we do best with them by keeping them growing till spring, then turning them out in the open border, and re-pot in August for winter-flowering.

Mignionette is much improved by occasional waterings with liquid-manure.

THE GRAPE-VINE BEETLE.

BY H. S. YOUNG, POUGHKEEPSIE, N. Y.

I WAS glad to see in the September number of the *Gardener's Monthly*, from the pen of S. S. Rathvon, a scientific description of the Grape-vine Beetle, and of its almost equally destructive larva or caterpillar. This is the first full account that I have ever read of an insect which, at various times, had given one a great deal of trouble, and has, more or less, diminished the product of my vines. I first saw the insect in Western New York, at Avon Springs, where I was then residing. My attention was drawn to it in this way: I had several grape-vines on the grounds on either side of my dwelling-house. One spring I noticed late in the season, after the usual time of the bursting of the buds of the vine, that some vines standing apart by themselves had not made any display of leaves, although others in another part of the garden had already done so. On examination, I discovered that almost every bud had a black mark upon it, and that this was caused by a small perforation very like the hole that would be made by a small knitting-needle; the bud was thus destroyed. I discovered that this was the work of a small greenish-blue or steel-blue beetle about an eighth of an inch long, which was frequenting the vines in numbers. These beetles were furnished with long antennæ or feelers, which they kept constantly in motion. On attempting to catch some specimens, I found them as nimble as fleas, and the motion of the hand toward them caused them to disappear as suddenly as the animal upon which the Irishman placed his hand, and it was not there. I looked for a description of this enemy, and for the means of preventing his depredations; but in the books to which I had access, I could find no account of it. Engrossed with other matters, I dropped the subject, and submitted to the loss of my grapes; not, however, without some feeling of disappointment and vexation. My other grape-vines, some six or eight rods distant, suffered no molestation of consequence. Almost every spring these insects were seen, to some extent, on the same vines,—however, not always numerous enough to cause much damage.

About eight years since I removed to this place, and commenced my favorite pursuit of cultivating the grape, with more time and facilities for its successful pursuit than before. I fairly rejoiced in an expected exemption from the attacks of my old enemy, the beetle. Such, indeed, was the case, until about three years ago, when I detected on my trellises two or three straggling specimens, which I attempted at once to immolate. The next year (1860) I saw a few more, and this spring (1861) some of my grape-vines here and there were so infested with them and with their succeeding larvæ, as to cause a serious loss to my crop of fruit. The beetles perforated the end of the vine just as it was ready to burst, and either destroyed it entirely or injured it so that the fruit was lost. Wherever the insect had been busy, there were present many feeble watery shoots or suckers, instead of vigorous offsets. I could thus readily detect the places that had been the scene of operations; this was only later, however, after the leaves had commenced to unfold.

I found the only way to prevent the attacks of the beetle was to go over the vines frequently, and examining them closely, seize every bug by the thumb and fore-finger, and then press it between these with all the violence and energy with which one is furnished by a righteous indignation against such villainous marauders. It is best to end the pressure with a smart rub to insure destruction, and be sure before the assault is made upon this light-footed saltatory animal, to dampen the fingers with water; otherwise you will not find him impressed between them when you look to see if he is there. Catch him and serve him as you would a flea. I paid my boys a cent for every bug they caught. This inspection of the vines must begin in this latitude as soon as the vines are lifted from their winter covering. This would be about the 12th of April, and continued daily until the leaves are unfolded in May. I intend next spring to leave my vines buried longer,—say until the 20th of April; this will lessen the duration of the period of attack, and also protect from late frosts, such as we had this last spring. Perhaps quassia-water or whale-oil soap suds thrown over the vine and buds, might prevent their being depredated upon; but I have never tried the experiment.

I have not yet described all the evils inflicted by this enemy to the grape-vine. Towards the end of May the cultivator who has suffered in April from the beetle, will discover feeding on the leaves of his vines at various points, singly, and not in bunches or masses, numbers of small pale brown caterpillars about half an inch long. They are very small, not over one-sixteenth of an inch thick, and resemble slugs more than caterpillars. As remarked in Mr. Rathvon's description, they do not eat holes through the leaves, but devour only the tender part, leaving the delicate nerves of the leaf. Instead of holes, the leaves show patches of brown net-work on their surface. The shoots are thus dwarfed, and make a feeble growth. But a great

injury is also found in the destruction of the blossoms yet unopened; the worm will attack these as a favorite repast, and they prevent the formation of any fruit. I have many times taken the insect from the bunch just as he was engaged in the work of destruction, eating the little blossom-buds just at the end of each little sprig in the forming bunch. A close examination is required to detect the destroyer, as he clings tightly to the stem, and from his small size, he is not seen; nor is the irreparable injury easily perceived by a superficial observer,—for the frame-work of the bunch may be there, but each little blossom has gone. I tried sifting sulphur over the vines to destroy the worm, but without effect. Some leaves with insects on were first dredged with sulphur, and then enclosed in a small paper box, and so kept for eighteen hours. On opening, some of the caterpillars were alive, although not very active. Towards the end of the season, which lasted until the end of May, I believe I resorted to quassia-water, but I did not test it as I could have wished. I thought, however, it was effective to some extent. I followed the plan of examining the vines frequently, and crushing the worms by bending the leaves so as to enclose and pinch them, as very slight pressure destroys them. The thumb and fore-finger must remove them from the fruit-blossoms.

It was only by this constant inspection that I was able to save a considerable part of my crop of grapes. Fortunately, these pests were not found scattered indiscriminately over all the vines, but only on certain vines and trellises. I perceived this tendency to localization and confinement to particular spots or regions, in searching for these insects on the vines of my neighbors. On some extensive grounds the beetles had not been seen at all; the owners did not know them by sight. In other places, only here and there were any traces of them, and these so slight as almost to escape notice. Now and then a cultivator had suffered, and was acquainted with the source of the evil; and on such premises as on my own, some vines had entirely escaped, while others were severely attacked and much injured. I did not hear of any especial means of prevention having been used.

On the whole, my impression is, that if these insects should continue to increase, they will prove as great a source of injury to the grape crop as the curculio is to the plum and other fruit crops.

They will, however, be much more under control than that beetle, inasmuch as a trellis is more accessible and open to examination than a fruit tree, and the grape-vine beetle is not quite so shy and dark in his ways as the curculio; but still exemption will only be procured at the cost of much time and trouble, as the vines will require daily examination during the prevalence of the pest.

I hope I have said sufficient to put cultivators on their guard, and to acquaint them with a most injurious insect; so that, if it should be seen next spring by any, they may at once commence defensive operations. Can any of your correspondents detail his experience in relation to this new enemy, which, Mr. Rathvon assures us, was widely disseminated this last season.

THE BEECH.

BY F., LITHCOMBE, VA.

For a grove near my house, in the shade of which to seek repose,—pleasant thoughts, composure of irritated nerves or harmonious colloquy,—commend me to the beech. It is a cheerful tree. Every tree has its character; and as I would call the oak the heroical tree, the chestnut the rich one, the maple the pastoral one, the yew the mournful one, &c., so I call my beech the cheerful tree. Cheerful on account of the color of its foliage specially, and of the general composition of the tree generally.

Withal, it is a stately tree, and so there is dignity in the cheerfulness it imparts; and we yield to its influence with the same satisfaction that we would yield to the practical serenity or high-toned buoyancy of a mind well balanced alike by philosophy and nobility of thought.

And, therefore, let the beech grove be near me, that, unobserved, I may, through the garden-gate, slip into it,—there refresh my soul, and return home a better, and perhaps, also, a wiser man. I will take for my motto the poet's words—

> "And let the world be e'er so rough to travel,
> My home, my cheerful home, will welcome me,
> And I will render joy for joy."

Whoever, like the writer, has travelled the Hartz Mountains of Germany at the girlish age of eighteen and seen the *Buchen Wuelder*, must carry with him through life the recollection of their beauty; provided he went there for no other purpose than I did, namely, the gratification of terrestrial existence, as Dr. Johnson might have latinically expressed himself. I have since seen the magnolia wilds of Florida, the spruces of Canada, the chestnut woods of Spain, and the cypress swamps of my own State, all of them very characteristic; but they failed to impress me as vividly as the beeches of the Hartz.

One feature there is about a beech grove which marks it distinctly from plantations of other deciduous trees: that is, its cleanness, (I know no better word,) produced by the absence of underbrush. The tapering trunks, with their smooth, shiny barks, stand clear and sharp, lightly carrying the canopy of blue sky above them, and very much resembling those graceful pillars in the quiet cathedrals of the Old World, amongst which, in and out, you and your thoughts like to wander. Why will there nothing grow among the beeches? Perhaps because their roots will not go below the surface-soil, and thus allow no chance of nutriment to any thing else.

This very feature of the beech recommends it to the landscape-planter, who aims at change of scenery. For instance, there is your creek, its shores covered with all manner of trees, shrubs and brushwood. You leave your boat at the big rock which closes "navigation," climb up it, and follow, with some difficulty, a sinuous path, that leads up the hillside through dense wood and tangled underwood. All at once, when you are up on the top, you strike a broad, clean gravel-walk, look around, and find yourself amongst the beeches. You feel directly that you are in good society, congenial to your soul. That gravel-walk you leave, now and again, to dive into the heart of the grove, and now and again you come back to it, till at last you give it leave to lead you gently down the hill to the garden-gate, and through the garden to my house.

The dense foliage of our beeches obstructs the sunlight, and the grove is delightfully dark,—not with the sombre darkness of the spruces, nor the mysterious darkness of the pines, nor the melancholy darkness of the cypress-swamp, nor even the serious darkness of the oak-woods. If darkness can be at all compared with darkness, then the darkness of my grove is that of a summer's night in Sweden. There the interval between the setting and the re-appearing of the sun is so short, and the position of the earth such, that you cannot tell is it light or is it dark? You feel the night, yet you do not see it. Does winter in the tropics come near the same idea? But what need we of comparisons? We need not try to discover the *sources* of our enjoyment,—it's enough for us that they flow. The trees themselves, moreover, are living witnesses of the delight their shade offers to the yearning hearts; for their glossy bark bears the marks of love,—requited and unrequited love. Here we have initials, interlaced indissolubly; there we have dates of days and years, records all of untold bliss, traces of souls that communed here together in ecstacy and kindled each other with fire divine. Was it not the voluptuous twilight in the beech trees that drew these people hither? Once here, there sprang up between them whisperings,—that twilight of human speech!—and then, perhaps, came sighs, and then, perhaps, tears; and the tears dissolved the sweet pain, till eternal vows were exchanged and Paradise lay open.

From the darkness we look to the light. How well does the beech know how to absorb that!—first by its shiny leaves, then by its satin bark, then by its clean trunk, and finally by the clean ground it stands on. Have an open space, somewhat circular, where the grass grows and the locust chirps,—somewhere in the thicket,—and how marvellous the surprise to him who thus from darkness gets into the golden light,—golden by the trees around him, golden by the verdure at his feet. Again look at the glistening foliage of the beeches that stand against the rise of the hill when the moon gets up and her beams fall slantingly. It is a scene which the painter may vainly strive to render; but it may inspire the poet to strains that bridge the misty charm between this globe and yonder world!

Whilst every tree has numerous kinds in its family,—whilst on our Continent the maple boasts its twenty, and the oak its thirty kinds,—the beech is a solitary tree. Not another kind of beech has there been found in America different from what we have. All its relations is an only brother in the Old World; and that brother rather excels it, as of the two he has the brighter leaves, the denser foliage, the thriftier growth, and the yet greater cheerfulness. There *are* a few varieties,—sports of nature,—I believe, perpetuated by that watchful *valetaille* of Nature, the nursery people; but, with one exception, they might as well be left to die again. That exception is the Purple Beech, sometimes called the Blood or Copper Beech, very suitable for an angle in the garden, for a landmark in the grounds, or to be sparingly applied in a clump of trees for the sake of contrasting color of foliage. Toward midsummer the Purple Beech gets rusty-looking, till gradually it fades into dirty green; and I bear it a grudge, because when I bought some, I fancied they would stay purple all the season.

The beech fancies a rather dry soil, with plenty of moisture in the air. It likes the vicinity of water. It will flourish, more or less, in any soil except a really strong one. Its form of growth indicates that it wants air; it, therefore, must not be planted closely. A beautiful object is an old beech tree that has been cut to the ground and stands re-

juvenated in a lot of new trees, shot forth in a circle from the roots. A true family group, the children holding together after the parent has gone. Pruning is required to perfect such group; and the best of good pruning is that it do not strike the eye, but can be traced merely by its results.

To finish this portrait of a beech, I should add something about its utility, but do not know any thing in regard to that beyond the facts, that it makes good fire-wood, and that its sweet fruit rejoices piggy's palate and fattens him. Thus the elegant beech ministers to the wants of the most despicable of four-feeters, and the aristocracy of vegetation lies levelled.

PROPAGATION BY CUTTINGS.

BY "HOOSIER," MADISON, OHIO.

ALMOST every person who cultivates and is fond of flowers tries to increase them by slips and cuttings; but how very few succeed! I think it is mainly owing to the fact that they do not understand that, in order to induce cuttings to throw out roots freely, the air around them and the soil or material in which they are placed must be kept in the same condition as to heat and moisture *all the time*. The expression used in most books upon the subject, such as "struck in sand with bottom-heat," &c., are to most amateurs of small experience quite unintelligible, and many persons think, that to root a hundred roses, &c., would be an impossibility, except for regular professional florists. I have tried various methods recommended in the *Gardener's Monthly* and other works, but with very partial success, and, in many cases, total failure; but for a few years I have tried a plan of my own, that has with me succeeded perfectly. I do not claim any thing new, and there is certainly nothing difficult about it, and I think that most persons cannot fail to comprehend it.

I procure a store box, of any size that is most convenient; then fill the box with stable-manure to within a foot or so of the top; press it down, and throw on a few pails of water; then put on a few inches of soil, and then four inches of clean sand; fit it with a sash as tight as possible. I let it stand a short time until the first heat has passed off; then put in the cuttings and water them, and place the box where it will be shaded from ten o'clock until three,—until the cuttings have rooted well, when it can have more light if kept watered. I intend to keep it at such a temperature and such a state of humidity that there shall always be a moisture on the under side of the glass.

In selecting cuttings of roses, I always select the shoots from the lowest parts of the bush, and take as many end shoots as possible, and leave the leaves, on placing them from half an inch to an inch in the sand, and press firmly.

Cuttings of pelargoniums, verbenas, heliotropes, &c., may all be rooted in the same manner any time after the 10th of October and 1st of November. Cuttings placed in this condition will all, or nearly all, grow, and can remain where they are until spring with some protection, or be potted and placed in a pit or greenhouse.

I doubt whether you will think this worth publishing. If not, perhaps I shall try again on some other subject.

Will you be so good as to say in the next *Gardener's Monthly* what treatment is proper for *Canna indica* that has been in the ground all summer? Also, what soil and climate suits *Cissus discolor*. Mine does not seem to thrive very well.

[We are much obliged to our correspondent, and wish we could induce others like him to think that possibly their observations "might be worth publishing." No one but an amateur can properly appreciate the wants of an amateur, and the whole of the class are interested in the success of one of their number. With regard to rose-cuttings, the plan of our correspondent is founded on correct principles, and ought to be, as he finds it successful. We know an amateur who succeeds very well with his rose-cuttings by taking nearly ripened wood in September, setting them in six or eight-inch pots of sand, and then exposing the pots to the full sun,—watering them constantly, as often as they show signs of dryness.

Cannas we take up before the frost injures them; pack thickly in shallow store boxes, and set in the cellar for the winter, never letting them get entirely dry. Cissus discolor wants a temperature of over 50° to get through the winter well. When below this, it loses its leaves, and has to be kept rather dry till spring, when it usually pushes out and grows again.—ED.]

PROTECTION OF WALL FLOWERS.

BY C. C. YARD, TRENTON, N. J.

YOUR correspondent, "a Subscriber from New Bedford," wishes information in regard to the protection of wall flowers, I will give him the benefit of my experience:

Observing several times in the spring, that my wall flowers, which were out through the winter, looked as well in the fall *at the top*, and yet were

dead, in fact. I was led to examine the *cause*, and found, in every case, that the soft wood of the stalk was injured by freezing and *thawing*. I took the hint, and the next fall, having some very fine plants, I procured *nail kegs*, knocked out the ends, and putting a fork full of loose litter around the stock, slipped the keg over the plant, driving it slightly into the ground, and throwing the earth around the bottom to hold it securely, *leaving the top open*.

This plan preserved them safely, and has *never failed*.

If the plants are small, I set them close together in a secure place in September, and put a broad frame around them, with loose manure around the stocks. This answered equally as well as the other plan. The idea is, to keep the sun from all but the foliage, which is not injured by it.

[Sorry this excellent hint arrived after our last number had gone to press. However, "thawing" has not yet commenced, and it will yet be in time for service this season.—Ed.)

FERTILIZERS.

BY NOVICE.

Having observed the unsystematic and empirical methods of fertilization pursued by most cultivators, and the equally unsatisfactory composition of the various fertilizers sold in England and this country, I have been prompted to collect, from the most authentic sources, and offer, for the consideration of your readers, some leading facts pertaining to the subject, for the purpose of stimulating further inquiry and experiment on this vital point of plant-culture.

Upon the annual return to the soil of all the elements removed by the growing plants, depends its continued and uniform fertility. A neglect to restore any one or more of these elements entails: first, diminished product; next, diseased crops, and, eventually, utter sterility.

It is true there are some soils, as the James River bottoms, portions of the Scioto Valley, and fields in Central Kentucky, so abounding in all the materials of plant food, that a half century or more of cultivation without manure has failed to exhaust them, and they still yield remunerative crops. These, however, are rare and notable exceptions to the general rule, that long-continued cropping of the soil, without restoring all the abstracted elements of vegetable life, results in nearly utter barrenness.

The organic requirements of plants consist of oxygen, hydrogen, nitrogen and carbon, and are furnished primarily by the atmosphere, dew, rain and snow; they also abound in most animal manures. The inorganic elements are magnesia, iron, silica, lime, potash, soda, iodine, manganese, phosphoric and sulphuric acid and chlorine. Of these, iodine and manganese appear but seldom in the analyses of plants, and then in minute quantities only.

Lithia is also found in the ashes of many plants in quantities scarcely appreciable. All these elements exist in he soil only, or are derived originally from it.

It would be equally difficult to find an arable soil *entirely deficient in*, and another containing, in their *due proportions*, *all* of the inorganic elements of plants. Granite soils often require lime, while calcareous earths are generally deficient in potash. Other soils, as the chalk formations of England, contain so large an excess of one mineral element as to be almost worthless, save under a profuse application of their organic and inorganic requirements.

The following tables, derived from careful and repeated experiments in England and this country, exhibit the amount of the different inorganic substances appropriated from the soil, annually, *per acre*, by most of the staple crops of our country.

The analyses of wheat, barley, turnips and hay, are taken from Muspratt's Chemistry. Those of oats, rye, potatoes and carrots are based upon tables in Johnston's Agricultural Chemistry; that of Indian corn upon the analyses given in Klippart's Essay on the Wheat Plant; that of tobacco from Campbell's Agricultural Chemistry; and that of cotton from Professor Shepard's report on Sea Island Cotton. For convenience of comparison and reference, the various compounds in all the subsequent tables have been, as far as practicable, reduced to their respective bases or oxides.

The quantities grown per acre may, in some of the crops, seem large, but they have all been attained both in Great Britain and this country, and may properly serve as standards for the skillful cultivator to equal.

	WHEAT. 25 Bushels.			BARLEY. 40 Bushels.			TURNIPS. 20 Tons.			OATS. 50 Bushels.			RYE. 25 Bushels.		
	Grain	Straw	Total	Grain	Straw	Total	Bulbs	Tops	Total	Grain	Straw	Total	Grain	Straw	Total
Potash,	7.15	22.44	29.59	7.24	10.29	17.53	142.66	88 82	231.48	3.75	32.63	36.38	7.09	1.28	8.37
Soda,	2.73	0.29	3 02	4.32	0.92	5 24	17.31	16.76	34.07	3.30	0.08	3 38		0.44	
Lime,	0.85	12.09	12.94	1 39	15.53	16.92	46.24	72.14	118.38	2.15	5.70	7.85	1 63	7.12	8.75
Magnesia,	3.63	6.89	10.52	3.97	5.25	9.22	18.16	9.58	27.74	1.68	0.83	2.51	2.37	0.48	2.85
Oxide of Iron,	0.29	2.35	2.55	0 79	1.35	2.14	4.35	2.67	7.02	1.00	0.07	1.07	0.56	0.75	1.31
Phosphoric Acid,	15.02	5.54	20.56	20.74	5.02	25.76	25.77	28.80	54.57	1.75	0.45	2.20	0.61	2 04	2 65
Sulphuric Acid,	0.07	10.49	10.56	0.05	2.66	2.71	46.24	38.81	85.05	0.88	2,97	3.85	0.30	6 80	7.10
Chlorine,		1.97	1.97	0.02	1.58	1.60	12.24	49.75	61.99	0.25	0.18	0.43	0.12	0.68	0.80
Silica,	0 35	117.94	118.29	14.36	115.14	129.5	27.03	2.67	29.70	49.40	172.05	201.60	2.19	91.88	94.07
Total Pounds,	30.00	180.00	210.00	52.88	157.74	210.62	340.00	310.00	650.00	64.16	214.96	259.27	14.87	111.47	126.34

	POTATOES. 500 Bushels.			INDIAN CORN. 50 Bushels.			COTTON. 500 Pounds.			CARROTS. 1000 Bushels	HAY. 1½ Tons.	TOBACCO. 2000 lbs.
	Tuber	Tops	Total	Kernel	Cobs & Stalks	Total	Fibre, 500 lbs.	Seed, 1000 lbs.	Total	Roots and Tops	Seed and Stalk	Leaves
Potash,	120.84	245.70	366.54	14.95	51.21	66 16	2.01	7.88	9.89	194.30	38.22	25.31
Soda,	70.02	2 70	72.72	14.11	47 80	61.91	0.27	trace	0.27	50.71	12.05	33 79
Lime,	9.93	389.10	399.03	0.10	13.44	13.54	1.04	13.20	14 24	36.13	44.45	142.65
Magnesia,	9.72	51.00	60.72	1.50	3.52	5.02	0.52	0.10	0 62	21.12	7.09	84.90
Oxide of Iron,	0.96	0.60	1.56				0.13	0.08	0.21	1.85	0.58	2.84
Phosphoric Acid,	12.03	59.10	71.13	22.18	71.04	93.22	0.33	17.23	17.56	28.27	15.12	50.44
Sulphuric Acid,	16.20	12.60	28.80	2.74	26.97	29.71	0.22	0.82	1.04	14.85	9.20	31.70
Chlorine,	4.80	15.00	19.80	0.30	28.13	28.43	0.37	0.05	0.42	3.85	4.06	18.42
Silica,	2.52	148.20	150.72	5.93	167.72	173.65	0.11	trace	0.11	7.54	78.23	53.95
Total Pounds,	247.02	924.00	1171.02	61.81	409.83	471.64	5.00	39.36	44.36	358.62	209.00	444.00

The chaff of the cereals, the stems and refuse of the tobacco-plant, and the stalks, pods and leaves of the cotton-plant, are not included in the above tables; they are generally restored to the soil in some form, either in compost or ploughed in.

Now, unless the soil contain all of these elements in the quantities required for the growth of the crops, and unless they are, by constant and deep tillage, and consequent æration of the particles, brought into a condition of ready assimilation by the roots, a diminished product must ensue. This is prevented only by the application to the soil of these substances, in some one or other form of fertilizer, generally stable-manure, which is regarded by most cultivators, as the "panacea" for all the ills that plants are heir to.

The annexed tables of analyses of the *average* composition of old, well-rotted stable-manure and the best Peruvian guano, also of several artificial manures, will enable us to form a just comparison between the *requirements* of plants and the insufficient manner in which these wants are usually *supplied*. No. 1, 2, 3, are the best among a large number of English fertilizers, analyzed by an experienced English chemist. No. 4 is the Superphosphate of Lime, of Mr. Lawes, of Rothamsted, England, and the remainder are American fertilizers of the highest repute, kindly furnished by Dr. Evan Pugh, of the Farm School at Bellefonte, Pa.

	Stable-Manure. 1000 lbs.	Peruvian Guano. 100 lbs.	No. 1. 100 lbs.	No. 2. 100 lbs.	No. 3. 100 lbs.	No. 4. 100 lbs.	No. 5. 100 lbs.	No. 6. 100 lbs.	No. 7. 100 lbs.
Water,	754 5	14.37	27.20	16.85	21.78	23.05	25.75	27.69	43.86
Nitrogenous Organic Matter,	37.00	47.20	5.19	18.88	25.49				
Potash,	4.5	3.26		3.53	0.26	trace	trace	trace	trace
Soda,	0.5	1.74		0.76		trace	trace	1.47	9.20
Lime,	3.1	11.33	14.68	9.68	11.45	23.69	25.07	24.31	17.11
Magnesia,	0.5	0.62	3.67	5.98	4.35	0.18	0.10	trace	trace
Oxide of Iron and Alumina,		0.30				0.45	0.80	2.13	1.25
Phosphoric Acid,	2.63	14.61	20.53	16.51	18.07	19.25	15.13	9.04	13.28
Sulphuric Acid,	0.5	3.81	9.99	13.80	12 10	28.89	30.86	9.08	0 58
Chlorine,	0.22	1.22	0.72	2.60	0.28	trace	trace	1.12	6.06
Silica,	16.75	1.54		1.40		trace	trace	trace	trace
Insoluble Matter and Waste,	179.80		18.02	10.01	6.22	4.49	2.29	25.16	8.66
	1000.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

As silica generally abounds in all arable soils, and as it is readily soluble in the presence of the fixed alkalies, potash and soda, and of the alkaline earths, it will not enter into the comparisons herein made of the components of the crops.

Stable-manure, it will be seen, contains, besides silica, only 11 95–100 pounds of *soluble* inorganic matter in 1000 pounds, or about 1 2–10 per cent. These substances are tolerably well *proportioned* to the wants of the plants; but their very minute *quantity* necessitates the use of large amounts of manure to supply all the food the crops require. For example, not less than 40 tons are necessary to supply the potash, and 60 tons to furnish the lime requisite for a crop of potatoes, (including the tops,) as shown in the table. It would be much cheaper to buy the crude potash and lime, and apply them in a cheap compost. And so on of other elements of other crops. The large proportion of water, insoluble matter and waste in the manure, render it, where it is not produced on the farm, and has to be bought and hauled from abroad, one of the dearest fertilizers in use. The amount of *labor* incident to its proper fermentation, manipulation and thorough disintegration, to the hauling, spreading and ploughing in, and the inevitable crop of weeds resulting from its use, (unless old and thoroughly rotted,) are all important items in the calculation of its relative value, as compared with more concentrated forms of fertilizers.

Peruvian guano, as shown in the average of a large number of experiments by Professor Way, contains but a small percentage of chlorine, magnesia, iron and soda, and "its important constituents are reduced to: first, ammonia and its elements; second, phosphate of lime: third, potash." Of the organic matter about 17½ per cent. is ammonia, to which is due the very rapid action it exerts upon the first growth of plants. But this action diminishes with each succeeding application. It is the experience of most cultivators who have used Peruvian guano exclusively, that the quantity required, upon light soils, to produce a given crop, increases yearly, until the amount needed is, at last, more than the crops will pay for; in current phrase, "it exhausts the soil." In other words, the ammonia, acting in some way not yet fully established by chemists, (but probably by its decomposition and the elimination of free nitric acid,) as a solvent upon the mineral substances already *in the soil*, brings them into a condition suited for the action of the roots. As, by successive cropping, the soil becomes impoverished of inorganic matter, and as the guano supplies but little except the phosphate of lime, sulphuric acid and potash, (and, of this last, only one-eighth of the average requirements of plants), it is evident that the product of the soil must constantly diminish, unless these missing elements be supplied in some other form. On those soils which contain an abundance of the alkalies, sulphuric acid and chlorine, Peruvian guano will continue to exert a favorable influence. If deficient in these substances, *guano alone will not maintain their fertility.* Nor will fallowing or any other mechanical process *restore* to the soil any inorganic element or substances of which it has been deprived.

Under this view of the subject, the propriety of the English method, of estimating the money value of a manure by the amount of ammonia it contains, may well be questioned, so far, at least, as concerns its permanent value. For immediate returns, in one or two crops, a large amount of ammonia may be desirable; but for repeated and permanent application, it alone is too exhaustive of the soil. *All* highly nitrogenous manures need to be accompanied by large applications of the inorganic constituents of plants.

In the manufacture of artificial fertilizers, generally, a cardinal error prevails; it is assumed that the soil to which they are to be applied contains a full supply of all the inorganic elements, *except those which predominate in the fertilizer itself.* Phosphates, of various compositions, have become popular, under the belief, inculcated by their manufacturers and by many chemists, that soluble phosphate of lime is the "one thing needful" to a perfect crop on a defective soil.

A glance at the tables will show the fallacy of this idea. Phosphoric acid is indispensable to all crops, so is potash, and, in most crops, to a much greater extent than the phosphates. Carrots require nearly seven times, potatoes five times, and turnips nearly four times as much potash as phosphoric acid, while oats take over sixteen times as much. Again, in the turnip crop, the phosphoric acid is less in amount than the sulphuric acid and chlorine; yet "bones are good for turnips." So they are, on soils rich in their other constituents besides phosphate of lime, but not otherwise. The *highest* results obtained in England, on this crop, have been by a *mixture* of wood-ashes and bone-dust.

It may be argued that arable lands are more generally deficient in phosphoric acid than potash. Johnston gives analyses of seventeen soils, of various degrees of fertility, in *ten* of which there is more phosphoric acid than potash, and three of the remainder are *barren of either.*

An examination and comparison of the table of analyses of the various artificial fertilizers with the constituents of the crops, will demonstrate their deficiency in some important elements of plant food, especially in the item of potash. As there are some soils in which this alkali is entirely wanting, it should be supplied in the manure or applied separately.

The illustrations above given are drawn from the principal field crops, and address themselves mainly to the agriculturist; the same principles, however, apply, with equal force, to horticulture.

Analyses of the ashes of some fruit and deciduous trees show the following results:

	Pear.	Apple.	Grape.	White Oak.	Hickory.	Elm.	Red Beech.	Chestnut.
Organic Matter	4.02	4 60	2.20	5.70		1 45	1.86	1.74
Potash,	22.25	16.19	20.84	13.41	20.19	15.85	12.13	4.56
Soda,	1.84	3.28	2.06	3 50	0.09	7.64	15.58	1.41
Lime,	12.64	18.65	17.33	30.85	27.70	20.08	31.56	40.76
Magnesia,	3.00	8.40	4.40	0.36	8.60	4 72	5 44	5.77
Phosphates,	27.53	18.50	16.60	32.25	11·45	16.35	19.01	18.74
Sulphuric Acid,	0.50	0.03	0.23	0.12	4.64	0.12	0 47	0.50
Carbonic Acid,	27.69	29.10	34.82	8.95	21.40	29.51	24.39	23.84
Chlorine,	0.31	0.25	0.02	4.24	0.09	0.74	1.45	0.74
Silica,	0.30	1.65	2.80	1.01	6.16	2.00		1.43
Coal,	0.17							0.91
	100 25	100.65	100.31	100.19	100.32	98.46	111.89	100.40

Undoubtedly the best fertilizer for any fruit tree is the ash of its own or a kindred species; but, as it would be impracticable to obtain this, a good substitute may be found in the ash of deciduous trees, of which a mixture of the hickory and oak would probably be the best.

Many cultivators cause their *soils* to be analyzed, and add the missing constituents of their crops. In the present state of chemical knowledge, this presents some difficulties. First, the soil in every field, and in every square yard of the field, differs somewhat from the rest; so every inch in depth shows varying characteristics. The subsoil, too, which at every deep ploughing is somewhat mixed with the surface soil, varies widely, in its components, from the top soil. Again, under the numerous methods at present in use, different chemists obtain results oftentimes widely at variance. Late experiments in Prussia, separately conducted by different chemists, under the auspices of the government, upon one quality of soil, have yielded results so various as to cause a doubt whether *accurate* analyses of soils are yet to be obtained by any known process. This is not the case with plants, and all forms of vegetable life, whose elements, when they are grown upon the same soil, may be obtained with great nicety, and a reasonable degree of correspondence between the results of different analysts.

The *same* plant grown on *different* soils will give, when analyzed, various proportions of inorganic elements; this is owing to the wonderful power, possessed by most plants, of adapting themselves to the varying conditions of soil, climate, &c.

Chemical analysis of the soil, then, has but little value to the cultivator, except as it determines its *general* or *pervading* character. For example, soils shown to be highly calcareous, would need no lime; earth abounding in disintegrated feldspar requires no potash, but only to be cultivated with such green crops as will appropriate this crude form of potash, and, in their decay, yield it up to plants of a higher order.

A safe and sure method of fertilization would be to apply to the soil *all* the inorganic elements of the crop, plant or tree to be grown. Any excess there might happen to be in the soil, of one or more of these elements, could do no harm, and would be taken up by a rotation of crops.

A fair *average* of the analyses of the principal cereals, vegetables, and fruits would show the following percentage of inorganic substances: potash 26, silica 25, lime 15, phosphoric acid 12, soda 7, sulphuric acid 6, magnesia 5, chlorine 3, oxide of iron 1. It thus appears that silicate of potash, composed of 49.46 parts silicic acid, and 50.54 parts of potash, constitutes more than one-half, and phosphate of lime about one-quarter of the ash of cultivated plants.

That this important subject may receive further and fuller illustration, at the hands of more experienced investigators, is the earnest hope of a

Novice.

Peach-culture in Holland.—Peaches are grown in Holland in pits like a large three-light frame,—one tree being planted out under each light.

GRAPES AND PEARS.

BY WILLIAM BRIGHT, PHILADELPHIA.

Our long absence from the columns of the *Gardener's Monthly* during the past year may lead some of our distant friends to suppose that we have seceded from grape-culture and gone off to the war, or lost our interest in pomological affairs. Such, however, is not the fact. During the war year we have been more industrious than ever in building grape-houses and increasing our stock of vines, and in every way preparing to give our friends a "little more grape" hereafter. We have also made numerous improvements (as we believe,) in the construction of grape-houses, and in grape-culture, which we will soon present for public consideration. For the present, it may be gratifying to those who have, in any degree, adopted our system of grape-culture, either in the vinery or the field, to know that, during the past year, the results of our very extensive experience in the management of the vine, upon the plan which we have heretofore advocated, have been highly satisfactory to us, and give us no reason to alter or retract any of the leading views that we have advanced in our work on this subject.

Vines in small inside, detached and ærated borders, when managed with any proper degree of skill, have made a fine, strong, healthy growth, and ripened their wood admirably; while those which have been fruited for the first time have shown the capacity to produce large crops of perfectly ripened grapes in fifteen or eighteen months after being planted in the border, and especially to set and ripen the Muscats finely in cold graperies.

One thing not before stated in our directions respecting inside borders, has been strongly impressed upon our mind by the last season's experience, viz: the necessity of packing the soil in such borders as closely and firmly (ramming it down, in fact, when dry,) as in potting vines or trees for pot-culture. This will give more nutrition to the vine in a small space, and render the border more retentive of moisture.

We have made no special reports of our success this year under the new system, because it was the first important fruiting year, and the public mind was too much occupied with the war to heed us. In the vineyard we lost our entire crop on thousands of vines by frost, and hence have no report to make on that branch of the subject. The shoots had grown two inches long, and the fruit had begun to show, when the frost occurred. The crop was, of course, lost, but the vines were not materially injured.

In answer to the inquiries made by "A Delawarian," in the last number of the *Monthly*, respecting the new foreign grapes, we give a few notes from our experience.

The *Trentham Black* we have fruited this season. It is a large plum-shaped and plum-colored grape; a remarkably free bearer; bunches large and well shouldered; flavor equal to the Black Hamburg, and a month earlier. It is a very vigorous grower, and well adapted to cold graperies. We consider it one of the best for pot-culture.

Buckland Sweetwater.—This is a great acquisition, the largest and best of all the Sweetwater grapes. It is six weeks earlier than the Black Hamburg, and almost as large. It is a good grower, and the flavor is rich and refreshing. The late reports from England are strongly and unanimously in its favor.

Muscat Hamburg.—This is a truly magnificent grape. We obtained, this season, bunches of two and a half pounds weight, from vines only eighteen months old from the eye. It is a very strong grower, and the berries set very freely and compactly. The flavor is admirable, as we have described it before,—a rare mixture of the rich sweetness of the Black Hamburg and the peculiar aroma of the Muscat grapes: two of the best and highest flavors, united, yet distinct, and altogether incomparable.

The *Bowood Muscat* we have also fruited this season, and we feel convinced that it will perfect its fruit in all inside borders in cold graperies. It sets quite as freely as the Black Hamburg. The bunches are very large, and the berries of good size. The flavor is extremely sweet and rich, with an aroma equal to the Muscat of Alexandria. It is almost as fine a grape as the Cannon Hall Muscat, and will suit the majority of cultivators much better.

The *Barbarossa* is really one of the best of all the late grapes, but it is generally considered a shy bearer.

Golden Hamburg.—We think this fine new white grape fully sustains its previous reputation. It does well in the cold grapery, and proves a little earlier than the Black Hamburg.

In pear-culture we have arrived at some new, and we think valuable, conclusions. The chief portion of the crop, on several thousand trees ready for fruiting, was destroyed by the late frosts; but our faith in the value of pear-culture generally, and of the dwarf pear especially, is increasing. One

point in which we think many cultivators of the dwarf pear have erred, is in allowing the leader or top of the tree to become too long and heavy for the roots, (forming, in reality, a powerful lever to wrench the tree about in the earth,) and also, in constantly pruning and pinching the side shoots, so as to create bushy, unfruitful pyramids, instead of open, fruitful trees.

After producing the proper number of branches by pruning, we practice a severe "let-alone system" (except as to the reduction of the leader) till they come into fruit. The general desire to form pyramids, we think, has been a great injury to dwarf pear trees. Healthiness and fruit we consider more important than shape; and there are very few trees which, even with great skill, can be successfully pruned into pyramids without sacrificing both the great points above named.

The plant-louse, or scale insect, has this year made its appearance in vast numbers upon our pear trees, and we have had a severe contest with it. This insect, it is well known, deposits its eggs, by the dozen, under a small white scale, or covering resembling tough paper, during the summer, and hatches twice a year. The male is winged, and flies from tree to tree; the female does not fly. The young progeny feed upon the juices of the tender bark, and if not removed, prove very injurious to the vitality of the tree. We have used, this season, a wash composed of a strong solution of whale-oil soap, into each gallon of which we placed two pounds of common carbonate of soda (sal soda) and half a pound each of Scotch snuff and cayenne pepper. This appears to be very effectual in destroying the scale, and also in removing all insects and moss from the bark. It should not be applied till after the leaves have fallen from the trees. We allude to this subject because, in nearly all our visits to private gardens, we find pear trees infested with the bark-louse,—the owners not being aware of it,—and we feel sure they cannot thrive with such tenants on their trunks and branches.

THE "CANADIAN" POND-WEED.

BY REV. VINCENT CLEMENTI, PETERBORO', C. W.

On referring, the other day, to a back number of your interesting magazine, to which I am a subscriber, I met with a request, at page 160 of last year's volume, for information respecting the officers of Horticultural Societies in Canada, as well as in the States. I beg to furnish you with the names of the President and Secretary of the Peterboro' Horticultural Society, organized this year:

President—Rev. Vincent Clementi, B.A.

Secretary—G. H. Hughes, Esq.

I avail myself of the opportunity to ask you if yourself or any of your correspondents can convey some information respecting an aquatic plant, the *Elodea canadensis*. A correspondent of the *Canadian News*, published in England, writing from Amsterdam, says that this plant has made its appearance in the rivers and canals of Utrecht. It is stated to have been introduced from North America into England, and to have caused serious apprehension, both in that country and in Holland, that its singularly rapid extension may be productive of alarming results.

The editor of the *Canadian Agriculturist*, published in Toronto, inquires whether the plant is known in Canada. I am not prepared to answer that question; but if it is not, *unde derivatum?*—whence its name? Gray mentions but two varieties—*Virginica* and *Petiolata;* the latter from New Jersey, southward and westward. But then he describes a member of another family, the *Frog's Bit*,—(the *Elodea* is, he says, a *St. John's-wort*,)—the *Anacharis, water-weed*, which may possibly be the plant in question. At all events, the name is more suitable to so mischeivous a weed, for it is certainly a weed altogether *destitute of charms.**

It would seem that neither of these plants is intended to flourish in rivers possessing a rapid current. They are *marsh* or *pond* plants, and rejoice in such waters as are sluggish, if not stagnant, and unobstructed by boats, or drift-wood, or other extraneous matters calculated to injure their very fragile stalks.

Paxton gives us only two species of *Elodea*, which, by-the-bye, he terms "interesting aquatics:" *Guianensis* from Guiana, and *pulchella* from the East Indies. He makes no allusion to a *Canadian* species. He assigns the *Elodea* to the *Frog's Bit* family. Gray and Paxton are, both of them, recognized authorities; how are their apparently conflicting statements to be reconciled?

[Paxton is received as an authority on horticultural matters, but none on botanical. His "botanical dictionary" was only intended as a compilation from sources that had the greatest weight with him. His work is regarded as valuable when it does not conflict with recognized botanical authority.

The proper name of the Pond-weed referred to

* ἀχαρις.

is the *Anacharis canadensis*. It was called *Elodea* by one botanist (Richard), not knowing that the name had previously been given to a plant of the St. John's-wort tribe by Adanson, another botanist Another name had to be given, and Nuttall called it *Udora;* but Dr. Gray has considered it not different from *Anacharis;* and so, on Dr. Gray's authority, this name is the recognized one. It is very common all over North America, probably extending to the Arctic regions.

In all probability, our European friends are in error when they say the plant was introduced there from North America. It was thus they accounted for its sudden appearance; but the history of water-plants all over the world shows them very liable to be overlooked by botanists, until one discovers them, when they are usually found abundant everywhere. Certainly, the first botanists who examined the Pond-weed in England on its first discovery there, —about twenty years ago,—had no thought of its being an introduction; but a newly-discovered species, and Babington named it *Anacharis alsinastrum*. Dr. Lindley, we believe, considers it the *A. canadensis*, introduced with our timber.

It is very abundant in most streams in Pennsylvania, New Jersey, and Delaware,—varying a little in form, as the plant is either male or female,—or grows in deep or shallow water, but no more an annoyance to ponds than the *Potamogctons*, or any other water-plants. It is chosen as one of the handsomest ornaments of the now popular aquariums in this section.—Ed.]

PURLOINS FROM MY CORRESPONDENCE.

F. K. PHŒNIX, BLOOMINGTON NURSERY, ILL.

An amateur, Quincy, Ill., (a most excellent fruit district, by the way), writes about pear trees, "I had intermixed dwarfs and standards, but am now separating them, that I may give each its proper care without injury to the other. I give dwarfs high cultivation to about the 1st of August, and then allow the "crab-grass" to grow up, as it does freely, checking late growth,—shading the trunks from the hot autumn sun, and forming a natural mulch ing over the entire surface, thus securing a more uniform condition of the soil under the alternations of our winter weather. The testimony of *all* our old, observing citizens in this region is, that the pear standard will blight in the course of a few years if the ground about it be subjected to cultivation such as the dwarf requires; but lives, prospers and bears fine crops of fruit if left in timothy, grass or clover.

Of course, soil naturally adapted to the pear should be selected; with that style of cultivation the growth is slower,—a consideration, however, of little moment, I think, in comparison with the greater health and longevity secured in the sod ground.

Most of my losses, especially among the finer sorts of cherry, have been from the effects of hot suns, suddenly following a showery period, during which, there has been a rapid growth of tender wood, which would become parched and shrivelled in two or three days, followed by the speedy death of the tree.

My orchard of dwarf pears, though quite young yet, furnished me a supply of most delicious fruit during summer and fall, and the winter varieties now are abundantly supplied with fruit-spurs for next season. With me, out of forty odd varieties, the Bartlett and Golden Beurre are most liable to fail as dwarfs, from defective union at the graft. The Duchesse d' Angouleme fruit is good, sightly, large, and bears transportation well. The Kirtland pleased me very much, and ripened with me this season some weeks in advance of the Bartlett. Beurre Giffard was also very fine, and nearly cotemporary with Kirtland."

Pro Bono Publico.

THE DELPHINIUM.

BY FRANCIS PARKMAN, JAMAICA PLAIN, MASS.

[Concluded.]

The delphiniums, of straight and upright growth, resembling in habit the common Bee Larkspur, are those which open the widest field of promise to the hybridist. They are more susceptible of modification and improvement than the Chinese Larkspur; and what has already been accomplished among them by the florist, offers an ample earnest of future successes. The original varieties of this group are scattered in Europe, Asia and America. Their name is Legion, and to catalogue and enumerate them, is luckily the business of the botanist, and not of the cultivator. Some of them are, in themselves, very beautiful; others comparatively insignificant. The Bee Larkspur is a native of Siberia and America. The sepals are blue, and the small black petals, furred with yellowish hairs, look precisely like a bee nestled in the eye of the flowers. In general, it is but an indifferent ornament, but in some of its varieties the bright coloring and perfect symmetry of the tall blue spikes, make it a conspicuous and beautiful decoration for the shrubbery or the back of the border. The double varieties are often very fine, and several of

the new florist's varieties belong to the Bee Larkspurs. D. Barlowi, one of the oldest florist's improvements among the delphiniums, also owns the same lineage, though, in this case, the flowers of the Bee Larkspur are said to have been fertilized with the pollen of D. sinense. When true, which it very often is not, it is a large and perfectly double flower of the most vivid blue; extravagantly tall like the rest of the Bee family, sometimes shooting up its gleaming spikes to the height of eight feet. Of the best of species, more or less resembling the Bee Larkspur, none have been more productive of beautiful varieties than D. intermedium and D. delicatum. In the latter, as the name imparts, the prevailing colors are light and delicate, though the flowers are often very large, and the spike sometimes nearly two feet long. The eye is generally white, and the sepals light blue, but in a large bed of seedlings of this species raised by me the past summer, there were some marked exceptions. One, in particular, was very striking. The expanded flower was of a clear sky blue, faintly tinged with rose. The eye was of an intense velvety black fringe, with bright yellow hairs, and the flowers, though not remarkably large, were disposed with perfect regularity on a spike 18 inches long. Another seedling was closely similar, except that the eye was marked with two vertical bands of white. In another the flowers were of a uniform pale blue, very large and perfectly double. A fourth showed single flowers an inch or more in diameter, of a vivid blue, with an eye of pure white.

It is quite impossible to trace the pedigree of most of the florist delphiniums which have, of late years, been sent into the world. Some of them are of great beauty; a few are striped, shaded and mottled with white, pink, purple and blue. Others, including some of the best double varieties, display a blue circumference, with a purple or violet centre. None of them came true from seed; yet, as they are slow of propagation, seedlings are frequently sold under the name of the parent plant,—a dishonest practice by which some of the best varieties have lost character. It sometes happens, however, that the seedling, though different, is fully equal in beauty to the parent. Thus among a large number of seedlings from D. perfectum novum, an excellent double variety, the greater part were single, a few half double, and one alone perfectly so. Its color around the edges was a delicate sky blue, that of the parent being a dark blue, and the central petals were tinged with pink.

The principal spike was more than eighteen inches long, and the flowers were set so thickly as to hide the stem. In short, it was one of the best delphiniums I have seen.

Most of the improved varieties are, to borrow the French term, *remontant*, that is, they grow and bloom afresh at repeated intervals throughout the season. This tendency is in some of them so strong, that even while the first bloom is allowed to remain and ripen its seeds, fresh roots are thrown up from the root and a renewed bloom ensues. This took place in the seedling last mentioned. Unless, however, the seed is wanted, the flower-stalks should always be cut down after the first bloom, for by this the second is greatly strengthened.

In attempts to cross-breed and hybridize the delphiniums, some curious phenomena were observed, which, though by no means without parallel elsewhere, may be worth noticing. The pollen of a variety remarkable for the form and coloring of its deep blue flowers, was applied to the stigmas of a pale blue variety, remarkable for the length and symmetry of its flower-spikes. Among the offspring of the marriage, was one bearing a single spike, in which every flower was marked down the middle with a sharply defined line, one side showing the pale blue of the female; the other the dark blue of the male parent. The following summer the plant threw up four spikes, each uniform in color, two pale blue, the remaining two dark blue. Again, a fine single variety of D. elatum was fertilized with the pollen of D. formosum. In one of the resulting seedlings, the qualities of the two were perfectly combined. Two or three spikes of this description were emitted from the root, while, from the same root, appeared, at the same time, another spike, thickly set with small brilliant double flowers, utterly unlike either parent. This part of the root was cut out and planted by itself. It remains to be seen whether it will retain its anomalous character.

A variety of delphinium has, of late years, been discovered in California, with flowers of a brilliant scarlet, with a bright yellow eye! Delphinium cardinale, for so it was called, was hailed as a priceless acquisition, but on trial it has proved uncertain and difficult of culture. It often refuses to flower, and as often dies out altogether. Its beauty and its unique character make this a matter of regret, and he who can hit upon the secret of domesticating it, will do a signal service to horticulture.

Parti-colored Double Petunias.—The French have introduced a race with this character. Marie Rendatler, Elize Mathieu. and Madame Lanzezeur are said to be the best.

NEW GRAPES.

BY "FOX MEADOW."

Mr. Editor—Through "you and the *Monthly*" we are in receipt of a "Delawarian inquiry," and may we soon see the day that "inquiries" shall flow again into the *Monthly*, not only from Delaware, but from the Rio Grande to Maine! Such would be a "Happy New Year to all.

We would say to our friend of Delaware, that we fully appreciate the compliment paid to the worth of our experience. As an humble individual, and like the majority of gardeners, we are ever ready and willing to give our experience gratuitously for what it is worth.

Our friend's first question to us is of grapes,—"What is our opinion of three new foreign grapes, viz: the Black Barbarossa, Trentham Black, and the Buckland Sweetwater?" We would say, with reference to the Black Barbarossa, that of all the grapes we know, it is the most beautiful, the most handsome, and really the most wonderful grape we ever saw. It is peculiar, because it has peculiar qualities and properties. They consist of—

Firstly. The disposition of not fruiting at all in *rich* borders, and the reverse in reverse borders. It dislikes the *cold grapery*, because its season is not long enough to thoroughly ripen its wood, and, consequently, requires to have its *growth* commenced by the first of March. Under such circumstances, it is as productive or fruitful as the Chasselas de Fontainbleau.

Secondly. It is peculiar in its flavor, which arises from, and is dependent on, the length of time it is allowed to hang on the vine after it *looks* ripe. A vine started into growth in January, its fruit *could* be eaten in August, but to me insipid and sickly, a few would satisfy, and you "don't want any more;" but let it hang till November, and any one who likes Hamburgs will like the Black Barbarossa.

They have sent us a grape from England in the form of the latter. The true merits of its flavor they know very little of. It will hang on the vine from any period it *appears* ripe, for four or five months, in equally as good a condition as the first day it *appeared* to be ripe. It is a strong and luxuriant grower, and wonderful in its appearance when loaded with fruit. We have cut thirty-five pounds from a cane fourteen feet long, the bunches weighing five and six pounds, and doubt not the possibility of growing to nearly double that weight. Being a strong grower, it should not be planted among other weaker-growing sorts, unless the border be partitioned off, as Mr. Bright has recommended in his treatise on the vine.

To a commercial grape fruit grower this variety is invaluable, as from its lateness and most excellent property for long keeping, it can be taken into market when no other exotic grape is to be seen. We have just prepared a new house, one hundred and twelve feet long, to be entirely planted with this sort, and we look forward to the day when we expect to see one of the most glorious sights ever seen with fruit from this most noble and wonderful *Barbarossa*.

Trentham Black.—A good black grape, smaller than the Hamburg, and of good flavor. It is distinct from the latter, but by no means its superior. only hanging longer on the vine after it is ripe. New grapes really superior to the old ones are, like angels' visits, few and far between.

Buckland Sweetwater.—We do not know that this variety has any more right with the term "Sweetwater" than the Golden Hamburg or the Charlsworth Tokay; but having to get into some class, *authority* has pushed it among the Sweetwaters. It is, however, an excellent grape, and will prove to all who grow it well, a most excellent acquisition to the vinery. It has belonging to it what that fine named "Golden Hamburg" will never have,—*flavor* and *subsistence*,—and it will be grown extensively when the Golden Hamburg will be "known no more forever."

The *Buckland* will come down in the scales three pounds, if pretty well grown; but we are not aware that our friends on the other side of the Atlantic have ever grown it so heavy.

Now, in reference to "Fox Meadow's Book on Grapes," we beg respectfully to state, that from the amount of necessary labor involved in the number of architectural drawings, designs, and illustrations on the various subjects of which the work treats, it has taken a greater length of time than we contemplated, and also that its publication is not optional with us, but that of the publisher for whom we were engaged to write it. However, it is their intention to publish it as soon as the first dawn of morn appears on our, at present, sadly benighted times. We would here state, also, that it is not a work *confined* to the culture of grapes. It treats on the *construction* and *formation* of all classes and kinds of horticultural buildings, showing the various methods of *construction* by practical illustrations, from the simple frame to the conservatory of large proportions. It treats, also, of the propagation, culture, and general management of fruits, trees and plants, directly connected with all the various classes of houses illustrated, with

appropriate list of plants and fruits adapted to the various kinds of culture treated of. We have received a great many written applications for this work, and hope the publishers will be soon able to put it through their fingers. From this, our friends will see the reason why the work has not appeared. For such kind inquiries we feel highly honored and extremely obliged.

RHODODENDRONS.

BY A. MIELLEZ, FLUSHING, N. Y.

[Continued.]

As soon as the seed-leaves of the young plants are developed, they should be pricked off into other boxes or pans, made up in the same manner as before described, but with a little less sand, say about one-fourth. The pricking off itself should be done carefully and in a well shaded place, thus: Take a lump of seedlings out of the seed box and separate them on a piece of glass; then, with a small dibble, make a row of holes in the prepared pan or box; then take a small pointed stick, dip the point in water, and by touching the leaves of the seedlings, they will cling to it, and can thus be easily lifted into the holes: after which, press gently with the dibble to close the soil around them, and so on. They should be from three-quarters to an inch set apart. As it is of importance that they should get established soon again after this operation, a warm, humid place near the glass should be secured for them for the next fortnight or so. After that, put them in low pits or frames without artificial heat, but covered with lights or sashes. The bottom of the pit, or the place where the frame is to be put (except they have been concreted,) should be kept drainable, which may be done by digging in a portion of cinders and ashes. For the first time, give but little air, increasing by degrees; shade also well in the first, and less afterwards. Remove any plants that should happen to get damped off at once, and strew some charcoal or dried sand over such places. As the season gets warmer, remove the lights during morning and evening, replacing them for the middle of the days and during the nights, and when the latter get sufficiently mild, dispense with them also for that time; but if there should be sign of rain, better leave them on, as a heavy shower is very injurious to them in that young state; whereas it is now that good care should be taken not to let the pans or boxes get too dry, which would be equally fatal in its consequences. For the day time, say from eight or nine in the morning, till three or four in the afternoon, according to the season and the situation of the frames, it is best to have the lights on, *i. e.*, with plenty of air on the tops and bottom. This will serve to keep off the excessive heat, and give a nice current of air around the plants. The lights must also be shaded, either by painting them or, what is better, by a moveable "shading." A cheap and convenient shading material is known in England, under the name of "Tiffany." Has it been used here? [We believe not.—Ed.] Rolled upon a rod, it can be easily applied wherever it is wanted, and gives a very nice shade. There are two or three sorts; the strongest one would be best adapted for our climate. But instead of this, any shading, in the shape of canvass, boards or laths nailed together, will answer the purpose. A little judgment must be exercised as to the denseness of the shade, according to the season.

Towards the close of the season, water should be more sparingly applied, and by the time they have to go to winter-quarters (November), the soil should be in a rather dry condition. Upon this will depend much of a successful wintering. A place in a cold greenhouse, near to the glass, is by far preferable; but where this cannot be had, a good dry and airy cellar will answer admirably, provided there be sufficient light. Air should be given whenever applicable, the soil between the plants kept mellow and clean, and not more watered than will suffice to keep from flagging.

Early in spring, as soon as the ground is dry enough to be worked, the plants, then one year old, should be planted out in beds, with surrounding frame of about twelve inches high in front, and eighteen inches on the back, in distances of six inches each way. The beds should be well drained, and a suitable soil, to the depth of six inches, prepared, composed of the following, viz.: Two parts of good friable loam, one part of peat, one part of leaf-mould, and one part of sand, well broken up and mixed together, but not screened. By taking the plants out of the boxes or pans, care should be taken not to disturb the roots; if matted together, part them with a knife; it can be easily done if they have been pricked off in rows as directed.

[To be Concluded in our Next.]

Diana Grape at the West.—Mr. Elliott says, in the *Ohio Farmer*, that where the Catawba ripens well, the Diana does not compare with it in good qualities.

The Gardener's Monthly.

PHILADELPHIA, JANUARY 1, 1862.

☞ All Communications for the Editor should be addressed, "Thomas Meehan, Germantown, Philadelphia," and Business Letters directed to "W. G. P. Brinckloe, Box 406 Philadelphia."

☞ Persons sending two new Subscribers for 1862 in addition to their own, with $3.00, can receive a copy of our First Volume, (1859) free. All persons who have paid their subscriptions for 1862, by sending two new Subscribers and $2.00, can receive a copy of the same.

OUR THANKS TO THE PRESS.

We have heretofore avoided a parade before our readers of the many kind and flattering notices the press is constantly favoring our magazine with. These free and unsolicited expressions of encouraging approbation are, however, none the less valued, in that they are not more particularly and specially referred to. We trust that each friendly journal which has so favored us, will take to itself this acknowledgment of our sense of the obligation.

We append the following notice, however, from the *Boston Transcript*, not so much for the good things it says of us, as for the encouragement of those energetic Horticultural Societies whose praiseworthy efforts enabled us to say so much for them:

"War and Horticulture.—The *Gardener's Monthly* mentions the curious fact, that the last summer and autumn have been a season of increased activity,—a sort of a revival among the various Horticultural and Pomological Societies. Well-attended meetings, busy discussions, and well-furnished exhibitions have shown that, despite the noise of war, or possibly in consequence of it, the votaries of Flora and Pomona are bringing a renewed zeal to the worship of their pacific goddesses, —a sort of reaction (says the *Monthly*,) at which the most ardent patriot need take no alarm. To those who relish such a change from bulletins and telegrams, we heartily commend this excellent publication, issued at Philadelphia, under the direction of Mr. Thomas Meehan. It is one of the best horticultural journals in the language, eminently popular and attractive in character, and yet containing, in every number, matter of value to the most accomplished expert."

HOW TO GET A BUSHY HEDGE.

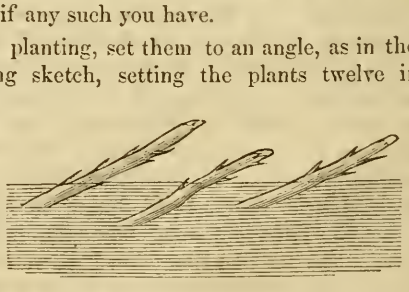
Most attempts at hedging look as if the owners would like to invert them. The top is thick enough where thickness is not needed; but between there and the base there is nothing to strengthen the moral principles of the passing school-boy, as he eyes the Pippins and Spitzenburgs enclosed within.

As usually managed, hedges are costly and unsatisfactory affairs. Properly treated, they are the least expensive of any kind of fence, and cheaper, by far, than the great majority of even those who have "faith in hedges" believe.

All hedges designed for protective fences are, in the first place, too high and too narrow at the base. No hedge need have more than a four feet rise, as it will do no harm for your neighbor's horse to see what crops you are growing; but it should be between three and four feet thick at the base, so that, unless he has served in the cavalry under some bold dragoon, and "knows bayonets," he may have no inclination to try the strength of your spines of hawthorns or osage-oranges.

Before planting, sort your plants into three lots, —that is, into strong, stronger, and strongest,— taking them first up by the handfull, and cutting off their heads to within nine or ten inches of the collar or point where the root portion commences. This is done with a sharp hatchet on a block of wood. The tap-root is shortened at the same time. If you plant them any way, just as they come from the nursery, they will grow only in one way, which, Darwin says, is nature's way. In the "struggle for existence," those which get the start will crowd out the weaker ones, and your hedge may have enough unevenness to satisfy any lover of pastoral poetry, but will fall short of your matter-of-fact expectations. After sorting, you can give the weaker choice the best chance of good soil, the next selection a little better, and the next the worst soil, if any such you have.

In planting, set them to an angle, as in the following sketch, setting the plants twelve inches



apart in two rows, quincunx fashion, which will place each plant about eight inches from the other. By thus sloping the plants, the shoots, as they rise perpendicularly, will give you a miniature forest, with every little rising trunk, but a few inches

apart,—so thick, that should you get so poor as to have to give up taking your favorite agricultural journal, and, consequently, forget the proper after-treatment of the hedge, though you may still have the usual crow's-nest topped hedge for your neighbor to laugh at, there will be, at least, enough stems at the bottom—the result of your subscription to the volume that contains this article—to prevent his pigs from getting in after your crop of little pumpkins.

If your hedge grows as well as it ought to grow, by the middle of June it will have made shoots two feet in length. Then get a sharp scythe, and go along the whole line, cutting off six inches of the young growth the whole way. This may be cut flat, as in mowing a piece of meadow ground. It will occupy but a few minutes for every hundred feet, and will be all the care required for the first year. The sides must not be touched this or any following year, until the required width has been reached,—three or four feet. If the soil be good, however, and the plants strong, it will nearly do this the first year.

The second year the plants in the middle of June will have reached the four feet we propose, when it should again be gone over with the scythe, first cutting off the young tops square to the desired height, and then cutting the sides so that the apex is wedge-shaped, like an inverted V (Λ). By cutting in the hedge so sharply and severely towards the apex, the strength of the plant will be thrown into the branches at the base, and enable them to push widely and freely.

Every thing, it will be seen, depends on the time and manner of pruning. It must be cut while the growth is active, in order to throw strength into the growing side-shoots; and it must be cut in a conical or wedge-shape, in order that the light may be easily admitted to every part of the hedge's surface.

The third year after the hedge is "well set,"—a technical term for filled up well from bottom to top,—the wedge-shape form may be modified to the truncate cone or half-oval, which is more pleasing to the eye.

Sometimes a few strong shoots will again push after the midsummer cutting. These should be cut away at the fall of the leaf, or they will interfere with the annual scythe-cutting, on which the principal cheapness of our style of management depends.

We have not said any thing of preparations for planting, the best mode of performing the operation, hoeing or after-cleaning; as, however well these may be performed, the permanent success and cheapness of management of the hedge do not depend on them, and are, therefore, not within the object proposed to ourselves in the present chapter.

CALLICARPA PURPUREA.

[SEE FRONTISPIECE.]

While looking through the interesting nursery grounds of Haines & Hacker, Cheltenham, near Philadelphia, in November, we were gratified by the sight, for the first time in this country, of this new Japan shrub. It was received by them under the name of *C. cærulea;* but is evidently the *C. purpurea* of Jussieu..

The habit of the plant is good, the leaves and shoots resembling the well-known *Buddleya Lindleyana;* but the plant is of a low bushy habit, and covered, when we saw it, with a profusion of rich violet-purple berries, forming an object of great beauty. They have had it exposed for two winters, and find it perfectly hardy.

THE PATENT OFFICE SEEDS.

We learn that the list to which we called attention in our last, as being about to be distributed, were imported under the last administration by Mr. Clemson, and that the present Commissioner has nothing to do with them. We also learn that every effort will be made to improve this department of the public service, and render it worthy of the objects of its existence.

Whatever the original objects of this seed distribution may have been, we honestly believe it will never accomplish a tithe of the good commensurate with the expenditures. But it is not on this account that we so often allude to the subject, but solely as a question affecting the national reputation of our horticultural knowledge.

When we commenced the *Gardener's Monthly*, we found our Horticulture, and the sciences connected therewith, in very low standing before the refined communities of the world. It is but a very few years ago that one of our best horticulturists, visiting London, was introduced to the editor of one of the leading journals there, as Mr. ——, the well-known American Horticulturist. The remark made in reply was—or was to the effect, for we forget the exact words—"American Horticulturist? What has America to do with Horticulture?" and when, about the same time, one of the finest trees of the American continent was described in Europe, and named in honor of one who not only had no

claim to honor as a scientific man, but whose whole life had been devoted to destroy principles dear to an American—when Americans demurred, they were plainly told, "If you are too slow to describe and name your own trees, you must not object at our names, when we have to do it for you,"

We have felt the justness, in a measure, of their criticisms. If we would command respect abroad, we must show ourselves worthy of it—not by hollow pretension, swagger and brag, but by correct taste and substantial knowledge. We know that a greater amount of money is annually spent on gardening, and its kindred sciences, in proportion to our population, than in any country of Europe; but a great deal of this is spent in making ourselves ridiculous, and in no quarter has this been more apparent than in the seed department of the Patent Office.

One of our great aims has been to see our country not only stand well before the world in its horticultural reputation, but also to merit it; and these disgraceful efforts of our national government, insulting as they are to the intelligence of our own people, as well as stultifying us in the eyes of other nations, annoy us in the extreme.

We sincerely hope that the reforms which are in progress, may prove worthy of the effort; but we are sadly afraid that the untimely frost of some political change will nip the bud of promise. On the whole, we think we can do better, at present, without government aid, and "we only want to be let alone."

MANURES.

Notwithstanding the tons of matter issued from the press during the last twenty years, the true theory of manuring land is in a very unsatisfactory state. It seems so very desirable to make science so much our hand-maiden, that at our bidding she shall make all our cultural operations work as by machinery. If we could only tell how exactly the fertilizing particles were removed by the soil, and how as exactly to replenish them in the way chemical science points out, how much, indeed, should we not gain? It does seem at times, when we read the results of close chemical experience, that the millenium of agriculture really has arrived; but when we look about us to the realities of cultivation, we fear that the wish is not merely father to the thought, but to the practice also; for we have known men with the strongest faith in the exactness of their science, put their principles into cultural operations, only to abandon them for the old farm-yard system of manuring, with all the "labor," all the "water," and all the "guess" and "haphazardness" that its opponents charge it with.

And yet this may not be owing to any fault of the principles exposed by agricultural chemistry, but to practical details of farm economy, which the mere scientific man will not be able, at first thought, to understand. For instance, it may seem as easy to return all the inorganic matters to the soil by burning the remnant of the crop on the soil where it grew, as to haul it first to the barn-yard, "mix it with water," and then have the labor of hauling it back to the place where it is due; but if during that process we are feeding and fattening cattle with it—and the same inorganic elements, be it remembered, are in the animal excrements as were in the original plant—we may be a gainer for all; the subject becomes one for "profit and loss" to decide, rather than philosophical abstractions.

Again, it is more than probable, as we have before suggested in these pages, that the action of the vital force of vegetation on manures, and which is never taken into account in chemical speculations, is of vast importance in dealing with results.

We have asked, and it has not been answered, whether it is not a condition of plant life as of animal life, that it shall, in a certain sense. "earn its bread by the sweat of its brow," and that the course of that labor is to exert its own vital force on the decomposition of organic matter, in order to get at the necessary specific inorganic material necessary for the formation of its structure? We know that it is so in animals—why may it not be so in plants? All the elements necessary for a man's yearly subsistence may be put in his vest pocket; but his vital force has to be exerted on many a peck of food to obtain them. We believe the real difficulty between the practical application of manure and its scientific principles will be found here, and may prove an insurmountable barrier to any correct theory of special fertilizers.

Nevertheless, in whatever way the necessary elements are to be *applied*, it is certain that they must be furnished in some shape. *Ex nihilo nihil fit* is as true of agriculture as of geometry, and a valuable service is rendered by the chemist in determining the elements of which our plants are composed. We have had for some months and now give an article from a valued friend, which is, we think, one of the most complete tables ever published on the subject.

Certainly the bricks are being gathered together in vast numbers—can it be that no architect may

be found to build the temple? Though we reluctantly confess that no scientific system of manuring has ever been satisfactory, we have strong hopes of yet living to see such a desirable result.

NEW FRUITS.

We receive many notes of seedling fruits that get good local reputations in many parts of the Union. These records are very useful, as many really valuable fruits may be brought to light in this way.

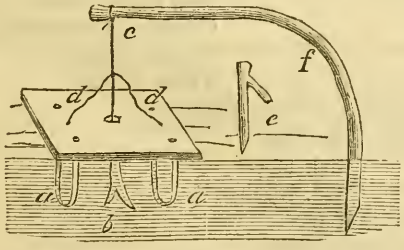
We would, however, impress on our corresponding friends; that when a new seedling apple is in question, *the variety that it most resembles*, and is popularly known, should be named and taken as a *standard of comparison*. Seedling fruits are now so numerous that specific descriptions are scarcely worth the room they occupy, for any other purpose than to aid in identifying a variety already named and well known. *Comparative descriptions* would, however, enable the reader to form some idea of the probable value of the variety described.

Straps and Queries.

☞Communications for this department must reach the Editor on or before the 10th of the month.

☞The Editor cannot answer letters for this department privately.

An English Mole Trap.—We promised, last month, to furnish a correspondent with sketches of the mole traps in use. As, however, all are made of cast-iron that are in use in this country, and can be had at all hardware establishments, we think sketches of them unnecessary; but where these cannot be had, the following, which any one can make himself, will serve a useful purpose.



A piece of half-inch board, six inches long by four wide, through which four holes are bored near the four corners, and one in the middle. A piece of half-inch hoop-pole is split, the ends pointed a little, and so bent as to fit in and appear as the two pieces marked *a*, *a*. Another forked piece, of the same or smaller material, is cut, and one end round-pointed, so as to fit in the central hole of the main part of the trap, as *b*; *c* is a piece of stout twine, to which are attached pieces of very fine copper wire *d*, *d*. Each of these two sides of wire is double, and is, when the trap is set, opened out and led along inside the wooden loops *a*, *a*; *e* is a common wooden peg, of which four are necessary to set the trap; their use is simply to keep the board to the ground, against the upward force of the bent spring stake *f*. The trap is set level with the ground, in a "run" of the mole, taking care to disturb the run only enough to allow the loops *a*, *a* to enter it. A mole passing through the run, has to go through the loops, and in its passage has to scratch away the fork *b*, when the string *c* is allowed to be forced upwards by the spring *f*, drawing up, at the same time, the wires *d*, *d*, between which and the board the mole is caught.

Moles are far less suspicious of these wooden traps than they are of cast-iron ones; and practised mole men catch large numbers this way.

In England these traps are made by the farm laborers, who get a few cents per mole beyond their regular wages, for every mole caught. Attending to their traps is a portion of their employment, while smoking their pipes during their dinner-hour. Good catchers will often add one-fourth or one-sixth to their week's wages by this privilege.

The chief art is in choosing the "runs" in which to set the traps. In soft ground, a mole would as soon make a new run as use an old one; but as they usually return to banks and dry places to rest, a "run" through hard ground, between their resting-places and their "hunting-grounds," generally makes sure work of them.

Baker's Seedling Grape.—*From E. Tatnall, Wilmington, Del., October* 16.—Dark black berries, slightly oval; smaller than Concord, but much closer set on the bunch; rather too musky, perhaps, for some tastes, but not for ours. It is very sweet; certainly equal to the Concord, and destined to become popular.

Lennig's White Strawberry.—*Joseph Lennig* writes: "As truth is always better than error, and eventually must prevail, I desire to call your attention to an article in December's *Monthly*, p. 371, headed "New White Strawberries," in which it is erroneously asserted that the *Albion* carries precedence and superiority; and that some, if not all the

other named varieties, are *unworthy of existence.* Please refer to the June or July numbers of *Horticulturist*, 1859, J. J. Smith, Editor, in which *Lennig's White* is fully represented (colored), accurately described and named. This gentleman, together with Mr. John Sherwood and myself, examined and searchingly criticised this new and wonderful variety; and from *my* bed of *Wilson's Albany, all* other varieties, and *every* white strawberry lately started into existence, *originated.* I have grown nothing else since, and now have a *large bed* full of the best this coming season.

[We must do Mr. Lennig the justice of saying that we had overlooked the fact of his strawberry having been already described in a responsible quarter, and that, should there prove little or no difference between the "New White Strawberries from the Albany," his name will, of course, take the preference. On the other hand, Mr. L. is evidently assuming too much when he says, "all the others came from his bed." We may add that it was not our intention to assert that these strawberries are all the same; but the object was to discourage this hasty naming and dissemination of "novelties," until time has been afforded for a fair comparison with existing kinds, and their relative points of superiority duly ascertained.]

ADVERTISEMENTS.—Parties frequently address the Editor in reference to their advertisements. These have to be re-mailed from Germantown to the Publisher, in Philadelphia, and often vexatious delays are the consequence. The Editor has nothing to do with publishing the magazine, and does not even see an advertisement until the regular issue of the month's number. ☞ *All letters on the business of the paper should be addressed to the Publisher.*

COMMUNICATIONS.—Somebody, who signs himself "Nobody," sends us something with nothing in it. It would occupy about three pages of our journal, which we cannot spare for the subject proposed to be discussed. We say "proposed," for all that is said is remote from the question. Short, pithy and to the point, good friends, and your communications are always welcome.

PRESERVATION OF ICE.—Some of the English journals are having a warm controversy over the article on ice-houses, that appeared in our magazine of September, by J. C. B. After it was copied into the London *Gardener's Chronicle*, the "nothing-new" folks undertook to show that "ventilating ice-houses was not an American invention." *This* member of Parliament had built one, and *that* one had another; and one claims he built one in that way in 1846, or perhaps 1847, he is not sure which.

Our opinion is, that it has been so long common, both in Europe and America, that it would be difficult to find out its first inventor. Certainly our correspondent had no intention of claiming it. His article was merely to elucidate the *science* of ice-preserving: and it has been generally conceded to be one of the most original and valuable papers of that class ever published on the subject. If we can justly lay claim to the science, we need not be so anxious to ask the credit of discovering the facts on which the knowledge is based.

GOOD EVERBLOOMING ROSES.—A "*Subscriber,*" *Alleghany County, Pa.*, asks for a list of twelve of the best old, and twelve of the best new everblooming roses. The following we recommend:

ONE DOZEN BEST OLD ROSES, FREE BLOOMERS.

Hybrid Perpetual.—Geant des Batailles.
" " Duchess de Cambaceres.
" " Docteur Arnal.
" " Madam Knorr.
Bourbon.—Reveil.
" Imperatrice Eugenié.
" Souvenier de Malmaison.
Tea.—Devoniensis.
" Gloire de Dijon.
Bengal.—Agrippina.
Noisette.—Mad. de Longchamps.
" Amié Vibert.

ONE DOZEN BEST NEW ROSES, FREE BLOOMERS.

Hybrid Perpetual.—Eveque de Nimes.
" " Madame Boll.
" " Mad'lle de Bonneure.
" " Comtesse de Chabrillant.
" " Eugene Appert.
" " Victor Verdier.
Bourbon.—Victor Emmanuel.
Tea.—President.
" Mad. Falcot.
" Mad. Blachet.
" Homer.
Noisette.—Liesis.

"CHEAPNESS AND EXCELLENCE OF THE HORTICULTURIST."—In its last issue, our neighbor says: "Our lowest club price makes it the cheapest

magazine, of its size and kind, in the country, and we intend the volume for 1862 shall rival all others in its excellence." As the only other magazines, "of the kind in the country," are our *Gardener's Monthly* and *Hovey's Magazine of Horticulture*, we had the curiosity to examine into its claims.

The type of the Horticulturist is larger than ours—this enables us to give 56 lines to a page, while they only give 42. Again, our pages are each 5.75 inches wide by 8 long, while theirs are 4.75 by 7. This gives us 21,404 lines, at 75 cents, our lowest club rate. But they have more pages than we, which, at the same ratio of calculation, gives them 24,072 lines; and which, at the same rate as we charge for ours, should be $1.08, *but their lowest club rate is* $1.30—so much for cheapness. But even this is not all, as we have one-seventh more words in our lines than they have, for which we have not claimed any benefit in our calculation.

It was never our intention, nor is it now, to rival the *Horticulturist*, but wish to stand, as we have ever done, on our own intrinsic merits, and the conductors of the *Horticulturist* cannot wish it more "cheapness" or "excellence" than we do; but as they have challenged a comparison with the facts, they will, no doubt, not object to have the full benefit of them.

Books, Catalogues, &c.

Manual of Agriculture for the School, the Farm, and the Fireside. By George B. Emerson and Charles B. Flint. Swan, Brewer & Tileston, Boston. Received from Martin, Randall & Co., Philadelphia.

The authors of this book are already well known as agricultural authors of high standing, and a work from their pens will at once command attention.

All books should possess some points of novelty to recommend them. Either the matter should be original, collected together in systematic form for the first time, or addressed to some new circle of readers.

To this latter class the present work belongs. The authors claim that a knowledge of the principles of agriculture should enter much more largely into a general and rudimentary education than it now does. They show, that while much that is taught in our common schools is with a very remote contingency of its ever being of practical utility in the affairs of life, agriculture or horticulture is the certain destiny of many, the hope of others, and the probable occupation of many more; and from this, they justly argue that a knowledge of agricultural principles should be considered an essential part of a good education.

The originality of the work consists in this view, and the object has been to produce a book that shall tender to it. The authors have succeeded well in their labors, so far as preparing the work is concerned. We now only hope that their view of its necessity will be recognized, and that the book will become an essential part of every family library at least, if the community are not yet prepared to have it in use in all the public schools.

In perusing the work we have only one regret, and that is, that a better system was not adopted in its arrangement. Method, to our mind, is the soul of education; but in this case it is very defective. An analytical table, showing the divisions of the subject, should be considered essential, especially in a work written to teach science. But there is nothing of the kind; and we have not only to hunt up the divisions through the pages of the work, but when found, they are unsatisfactory. For instance, on page 130 we have a chapter on "Tillage," and at page 134 on "Preparation of Lands." Such very nice divisions of a subject are liable to confuse and bewilder a student of first principles. Even the authors themselves confuse the subject, as the first question on opening the chapter on Tillage asks, "In what does the preparation of soils consist?"

There is also no division made between a distinct subject and a part of the same subject. For instance, Chapter II. treats of the "air and the gases in it." III. "the atmosphere and the forces acting in it." IV. "changes in the atmosphere." V. "water;" and so on through the book to the end. We make these criticisms, not to detract from the real excellencies of the work in question; but have taken the occasion to refer to it as a very common error in educational treatises, where, above all, we should see a correct method and system inculcated by example, as well as taught by precept.

The Illustrated Annual Register of Annual Affairs for 1862. By Luther Tucker & Son, Albany, N. Y.

On the appearance of last season's issue, we freely expressed our appreciation of the value of this little volume, and of the labors of the energetic publishers. This new edition we think an improvement on the last. An "Annual Regis-

ter," to our mind, should be a "register of progress," recording what has been fairly gained to the "science" (if we may so term it,) of rural affairs for the season past. Few such works attempt it, however, or any thing beyond essays on particular subjects of vital importance. The present issue of the Messrs. Tucker is the nearest approach to our ideal we have seen, and we cordially recommend it to all our readers.

Catalogues.

Preparations for the spring campaign already indicate progress. The Catalogues of our nursery friends have begun their annual flow towards our table, where they have always a spare corner prepared to welcome them.

For in the cause of horticulture, catalogues are powerful auxiliaries; and American catalogues, we are proud to say, show an amount of intelligent enterprise that will compare favorably with those of any other nation on the earth. One might suppose it mattered little to the nurseryman whether the stock he trades in lives or dies. "He has plants to sell," cries narrow-minded selfishness; "if they die, more must be bought to replace them." But these catalogues usually contain, condensed in a small compass, a mass of directions and instructions for success, that would, in ancient times, have been expected only in dollar volumes.

Few have any idea of the vast influence of an energetic nurseryman on the neighborhood that surrounds him. He not only makes the "desert to blossom as a rose," but actually *with roses*. In many cases, he makes his own customers completely, and does not wait for the taste before he prepares himself to supply it.

Talking, recently, with our friend, Mr. John Jay Smith, formerly the accomplished editor of the *Horticulturist*, about the great beauty of a certain town with which that gentleman was well acquainted, he remarked, "It is the best planted place in the Union. None can compare with it in beauty, and for so extensive a display of correct taste; and it has, although a very old town, all been accomplished within six years, when two intelligent young nurserymen settled there. Their influence on the place has been wonderful." And we know of many similar instances.

Thus we are always pleased to meet with an enterprising catalogue, and never look over one of them without feeling that every one who has a nursery within reasonable distance of him, should consider it one of the first duties of the year to get the "Annual Spring Catalogue," and see what he can find about him, before "purchasing elsewhere."

Up to the middle of the month, the following have come to hand:

Hoopes & Bro., West Chester, Pa. No. 1, Fruit department, with 50 pages full of information.

G. & S. Boalt, Norwalk, Ohio. Fruit and Ornamental Trees. 32 pages.

L. Trowbridge, New Haven, Conn. Essay on the Cranberry, and List of Fruits, &c.

Wholesale Lists.

Ellwanger & Barry, Rochester, N. Y.

J. S. Cook, Cincinnati, Ohio.

Pfeiffer & Blackburne, Cincinnati, Ohio.

A. W. Corson, Plymouth Meeting, Pa.

C. F. Erhard, Ravenswood, L. I., N. Y.

W. T. & E. Smith, Geneva, N. Y.

Parsons & Co., Flushing, L. I., N. Y.

Joshua Pierce, Washington, D. C.

F. K. Phœnix, Bloomington, Ill.

New or Rare Plants.

Arisæma præcox (*Early-flowering Arisæma*).—*Nat. Ord.*, Aroideæ. *Linn.*, Monœcia Monandria.—"A native of Japan, in the Gotto Archipelago." This pretty plant appears easily cultivated, producing its arched spathe strikingly striped with green and white; and with dark purple lips, early in the spring, if removed from a cool pit to the stove.—*Botanical Magazine.*

Spigelia splendens (*Brilliant Spigelia*).—*Nat. Ord.*, Loganiaceæ. *Linn.*, Pentandria Monogynia.—Nothing is known of the history of this beautiful plant; but as it requires stove-culture, and others of the same genus which require similar treatment are from Mexico, most likely it is a native of tropical South America. "Nothing can exceed the deep rich crimson of the spike."—*Ibid.*

Hoya Shepherdi (*Mr. Shepherd's Hoya*).—*Nat. Ord.*, Asclepiadaceæ. *Linn.*, Pentandria Digynia.—It probably came from the Himalaya, but its native place is not certainly known. Its flowers, rosy white, are not conspicuous. It flowered at Kew in June.—*Ibid.*

Arnebia Griffithii (*Griffith's Arnebia*).—*Nat. Ord.*, Boragineæ. *Linn.*, Pentandria Monogynia.—First discovered by the late Mr. Griffiths in Cabool. The genus is closely allied to Lithospermum. Flowers rich tawny yellow, with five remarkable deep purple spots, which gradually disappear. These spots are alleged by the Caboolees "to be the impressions of the five fingers of Mahomet."—*Botanical Magazine.*

Billbergia bivittata (*Ribbon-leaved Billbergia*).—*Nat. Ord.*, Bromeliaceæ. *Linn.*, Hexandria Monogynia.—A pretty plant, most probably a native of South America. Flowers white; leaves "under-surface dull brown, upper green, with two broad, buff, longitudinal bands, which pass into dull red at the base.—*Ibid.*

Craspedia Richea (*Glaucous-leaved Craspedia*).—*Nat. Ord.*, Compositæ. *Linn.*, Syngenesia æqualis. It has also been called *C. glauca* and *pilosa; Richea glauca* and *Podosperma pedunculare.*—A very remarkable hardy annual from south-eastern Australia, by no means unornamental." Its flowers are yellow, in dense globose heads, and open in June.—*Ibid.*

Sir W. Hooker's *Botanical Magazine* for October figures several new plants, amongst which of interest to horticulturists are:

Hoya lacunosa.—A native of Java, with small clusters of whitish-yellow flowers. Not near as ornamental as many Hoyas already in cultivation.

Mutisia decurrens.—A climbing composite plant, the leaves having something the appearance of a Nepenthe, and the flowers like a large Red Gazania. It is a native of South America, and is a greenhouse plant; but as it is a summer-flowering species, would probably prove a handsome ornament to American flower-gardens.

Salvia cacalliæfolia.—A Mexican species, with leaves like S. patens, but with dense panicles of small blue flowers. As the patens is a very early flowering kind, and this seems allied to it, it may be of much greater value to us than most blue-flowering kinds in cultivation, which flower too late for our climate.

Impatiens flaccida.—From the mountains of Ceylon. Handsome, and might thrive well in our borders in summer.

The last number of *Henderson's Illustrated Bouquet* (12) contains an excellent figure of the pretty Convolvulus mauritanicus, which is a capital subject for a suspended basket in a cool conservatory or balcony or corridor, and makes a really pretty bed in the flower-garden, its surface being for a lengthened period studded daily with a profusion of its grayish neutral tinted flowers. There is also a fine figure of Epigynium leucobotrys, a charming North Indian evergreen shrub, producing pendent racemes of snow-white berries, beautifully marked at the tip with a small black ring and five black dots; these fruits look like wax. Erythrina Marie Belanger, a fine variety raised in the south of France, and remarkable for its dwarf habit, combined with large dense racemes of flowers. A group of seedling varieties of Tropæolum of the bedding-out class.

New Lilac "Dr. Lindley," introduced by M. Van Houtte, has the flower-spikes eleven inches long, and the flowers brilliant purple and of fine texture.

New and Rare Fruits.

Aiken Grape.—Mr. Elliot says, in the *Ohio Farmer*, the Aiken Grape is a variety of Isabella, that ripens one week earlier, and never has mildewed so far.

Lydia Grape.—In the *Ohio Farmer*, Mr. F. R. Elliott thus writes;

"It is now the *largest*, *earliest*, and *best* white or light-colored grape, of which the vine is perfectly hardy, that is now known; and that it will be extensively grown when the Cuyahoga is thrown aside as worthy a place only in large collections."

New English Grape—Thomson's Early Muscat.—At a recent exhibition, before the London Horticultural Society, "a collection of Muscat Grapes was exhibited from Mr. D. Thomson. Archerfield Gardens, near Drem, New Brunswick. They consisted of Muscat of Alexandria; Tynningham Muscat, Bowood Muscat, and an early variety of Muscat, which is supposed to be distinct from any other in cultivation. This exhibition was made at the request of the committee, who desired to see all these varieties grown in the same house, and under the same circumstances; and to ascertain wherein the Early Muscat differed from all the

others. The Muscat of Alexandria, and Tynningham Muscat were long, tapering bunches, loosely set, and the berries were quite plump, and of a greenish-yellow color. Bowood was a short, thick-set bunch, and the berries were much more advanced in ripeness, and had begun to shrivel and change to the brown raisin color; but the Early Muscat was completely shrivelled, had lost entirely its yellow color, and had become perfectly brown and raisin-like. The flavor was particularly rich, and the sweetness was much greater than in any of the others. In the opinion of the committee, this is a first-rate grape, and deserves to be introduced into cultivation."

Champion Hamburg Grape.—A report of the London Horticultural Society thus speaks of this new candidate:

"Mr. Melville, of Delmeny Park, near Edinburgh, again submitted a small bunch of his seedling grape, Champion Hamburg Muscat. The berries were now much better colored than on the previous occasion, when the fruit was exhibited, and were of a uniform and even dull red or foxy color. The flesh was firm, very richly flavored, and with a fine Muscat aroma. This was highly approved by the committee.

Haskell's Seedling Grape, a writer in the *Michigan Farmer* says, ripens at Monroe, Michigan, one week before the Concord, and is fully as good.

Michigan Seedling Grape, the same paper says, is a grape equal to and resembling Catawba, but is more sugary, and ripens in that northern region from the 15th to the 20th of September.

New Pear—British Queen, raised by Mr. Ingram, from Maria Louise, is highly spoken of in the *London Gardener's Chronicle*. "When better known, will become," it says, "a universal favorite." Fruit medium, pyriform, of a warm red color next the sun, and flesh sweet, juicy and melting.

The Cheese Apple.—Mr. J. A. Foster, of Lewisburg, Pennsylvania, writes:

"I send you a short description of an apple, which originated with my great-grandfather, Mr. John Wickersham, in Fishing Creek Valley, more than fifty years ago, and named by my grandmother, Mrs. Hannah Kirk, the "Cheese." Laterly, it has been propagated to some extent in this county (York), where it has gained a high local reputation; and although it is not yet widely known —which is to be attributed to a lack of interest felt in pomology in this section of country—will soon, I have no doubt, be found at the head of every list of choice winter apples. Fruit rather above medium size, roundish, somewhat flattened; skin very smooth, greenish-yellow, beautifully striped and mottled over with bright red, profusely sprinkled with small grayish dots; stalk very short, set in a small round cavity, seldom reaching to the base of the fruit; calyx small, open, set in a small round basin; flesh white, fine-grained, very tender and juicy, sub-acid, with a rich spicy and sprightly flavor; quality considered the *very best* by all who have tasted it; core small, closed; seeds small, brown; tree rather a straggling grower in the nursery, but forming a very fine large and beautiful head in the orchard; a great and consistent bearer; season, November to February, though often kept much longer.

Domestic Intelligence.

Growing Cauliflowers.—The plants can be started as you recommend in your last number, either in a hot-bed, or on the south side of a fence or building; but if plants are raised in a hotbed, they come into heading during the heat of summer, and instead of forming a large, compact head, it is small, and splits up into small sprouts. If raised on the south side of a building or fence, the heat and shelter you seek for your plants, is also a shelter and harbor for the *fly*, and few will be the plants you will have left for transplanting. The open ground the north side of an open board fence, or the west side of a building or tight board fence, is perhaps the best place, out of doors, but the surest and best way is to raise them under a cold frame. If you have not hotbed sash and frame, a common window-sash will do. Make a frame of inch boards, twelve inches high behind and nine in front; cut notches in the stiles and lower part of the sash, to let the water run off, or when the sun shines it will operate as a lens, and burn your plants. Sow in drills three inches apart; when up, air freely, and frequently stir the earth with the fingers. Sow from the 15th to 20th of April; transplant from 20th of May to 1st of June. This is the way I have raised them for the last seven years, and you can tell, Mr. Editor, with what success. The *Early Paris* and *Large Late Lenormand* are the best varieties. The seed is imported.—*Rural New Yorker.*

Oregon—Her Agriculture, &c.—Oregon is divided by a rugged, lofty range of mountains, into two distinct climates. The Willamette Valley, west of the Cascade range, nearly all winter is wet and moist, the rains commencing in October and continuing till May. The country upon the east of the Cascade Mountains, comprising three-fourths of the State, is more like the Mexican climate, dry, with occasional rains.

The cultivated land, at present, is on the river bottoms, while the ridges between the streams are clothed with the most nutricious "bunch-grass," indigenous to the whole country, over a space of 150 miles square. This feed seems to have a solidity to it superior to any other native grass extant. Under cultivation, however, the English grasses seem to flourish best.

The climate is even throughout the year, with cool nights; no flies or musquitoes to annoy the rest of man or beast. The winters are usually from three to six weeks long, and cold enough to put up ice for summer use, as needed in the towns, and for California trade. The springs are abundant, delicious and cool; occasionally mineral springs, which are mostly impregnated with sulphur.

The timber is confined to the mountains and along the streams; fencing is mostly made of stones. In the bottoms the native willow is being introduced to fence, as it is hardy and grows rapidly. Crops grow rapidly, but some parts pay best to irrigate. The soil is light, rich and warm, and adapted to the growth of the apple and the potato, as California can well testify, by its abundant supply from its sister State, of the finest quality. Pears grow to an enormous size; quinces and most kinds of fruit do well in this State.—*S. W. Jewett, in Friends' Intelligencer.*

Youpon Tea (*Ilex cassine*)—Stray Southern papers occasionally reach our office through our friends along the borders; but we look in vain for any glimpse of horticultural news for our readers.

The following, from the *Raleigh (N. C.) Standard*, is the first we have seen for a long time:

"In view of the scarcity of tea and coffee by the war, we see the papers are recommending the use of the leaves and twigs of the Youpon, an evergreen which grows spontaneously on our coast. The Youpon is a common drink on the banks, and is highly esteemed by many. We have heard it said that when it is well cured, it is greatly improved when the milk and molasses are boiled with it. It is rather vulgar to use sugar for sweetening Youpon; molasses is the thing. A venerable lady, who lived to a considerable age on the banks, once speaking of the healthiness of Youpon as a drink, said, "Bless the Lord! Youpon has kept me out heaven these twenty years!"

Fruit-raising in Baltimore.—Mr. T. Baynes, in a recent *American Farmer*, gives the following account. The amount per acre is of no account, as all experience shows that the more extensive the operations, though the nett profit is greater, the proportionate profit is less; but as a statement of what can be realized in one season from about one-sixth of an acre of small fruits is in itself interesting:

"The portion of my garden, eighty-five feet square, gives the following result, viz—

GRAPES.

763 pounds, at 10 cents, - - -	$76 30
200 pounds, at 15 cents, - - -	30 00
170 pounds, at 11 cents, - - -	18 70
150 pounds, at 10 cents, - - -	15 00
1283	$140 00

42 quarts of strawberries, at 10 cents, - -	$4 20
58½ quarts of gooseberries, at 25 cents, - -	14 50
17½ quarts of raspberries, at 20 cents, - -	3 50
4 quarts of red currants, at 8 cents, - -	32
3 quarts of black currants, at 8 cents, - -	24
13 quarts of white currants, at 8 cents, - -	1 04
Rhubarb, - - - - - - - - - - - -	1 00
	$24 80
Grapes, - - - - - - - - - -	140 00
	$164 80

$164 80 for 85 feet square is equal to $1031 25 per acre.

Labor for digging and hoeing was twelve dollars. Besides, my attention (which is a pleasure) will not amount to over half an hour per day during the season."

The Lilliputian Onion.—Specimens were sent us by Mr. I. W. Briggs, of Western New York, who first called public attention to this new onion. Each of these small seed onions, if planted in the spring, will produce a large, fine onion, which, in turn, if put out in the following year, will furnish four or five heads of the small seed onions.

A bed 12 feet by 3½, planted with this seed, produced 1½ bushels, being equal to 1555½ bushels per acre; from which we may estimate 1000 to 1500

bushels to be the probable average crop. They are said to be more mild than any onion raised from the black seed. We have no doubt that this onion will take the market in preference to any other now known, while its immense yield renders it doubly desirable.—*Working Farmer.*

EARLY BEETS.—It is not generally known that these bear transplanting, as well as cabbage plants. We usually sow a few with our early plants, in the spring hotbeds, and when the cold weather disappears, transplant to the open ground. They are in use some weeks earlier than by the usual way.

Foreign Intelligence.

FRENCH BEET-ROOT SUGAR.—According to an official return just published in France, concerning the manufacture of beet-root sugar from the commencement of the season 1860-'61 to the end of the month of April, it appears that the number of establishments in activity were 334, being four more then in the corresponding peroid of the preceding year. The number of maufactories not at work, but having sugar still in stock, had diminished from twenty-four to fifteen. The quantity made was 97,900,000 kilogrammes, being 27,000,000 less than in the corresponding period of 1860. The quantity delivered for consumption had increased from 6,000,000 to 18,500,000 kilogrammes.

APPLE JUICE AS A DYE.—It is said to have been recently discovered in England, that apple juice supplies a long-sought desideratum of furnishing fast colors for printed cottons. A revolution is expected in the apple trade.

WHAT ARE FRUITS GROWN IN POTS.—An angry discussion has been going on in the English journals, through an exhibitor of grapes in pots having his vines "disqualified" by the judges. In growing his vines, he had plunged the pots in larger ones, and filled the spaces between with damp moss. In this way his vines bore thirteen large bunches each. Before exhibiting he cut away the roots that had grown in and through this outside moss. As all plants, more or less, root through the bottom of the pots, the question arose, "what is meant by a plant growing in pots?" and it has been decided that when a plant is suffered to root outside the pot, so that such external roots have had an evident influence on the successful growth of the plant in the pot, it disqualifies such plant for competition with others on exhibition.

SEEDLING PEACH.—*Early Victoria* was received, at the London Horticultural Society, from Mr. Rivers, of Sawbrigeworth, along with the following communication:—"I send you four fruit of a seedling Peach, which I have this moment gathered from the parent tree raised from a stone of the Early York Peach in 1854. It has hitherto proved the earliest of all, except the Red Nutmeg, which it promptly succeeds. This season it commenced to ripen on the 5th inst., or about a week earlier than its parent, the Early York, and this has for four years (namely, from 1858, when it first gave me fruit, to the present time) been its tendency, with the exception of 1858, when in common with very young seedling Peach trees (as I find from experience), it ripened its fruit very early, and quit ten days before its parent. 'It has large flowers, serrated leaves, and a habit robust and vigorous in the extreme, being with the Early York the only sort that was not killed last winter, in the open quarters where the frost was most severe—from 4° to 6° below zero. If thought worthy of a name, I propose the Early Victoria. Enclosed with the seedling are fruit of the Early York Peach, Petite Mignonne Peach, Early Ann Peach, all growing in the same house, and alongside of the seedling.' The fruit was about medium size, pale yellow on the shaded side, and dark dull maroon on the side next the sun. The flavor was most delicious, and the fruit was highly approved by the committee, as a variety for orchard-house cultivation, but they suspended judgment upon it as an out-door variety, until it had been grown against the wall in the open air. It was much superior to the three varieties that accompanied it."

A THORNY HAWTHORN.—A new variety of the English Hawthorn, called *Crœtagus oxyacantha horrida*, has been introduced in the Belgian Gardens, with thorns as large and as formidable as our Honey Locusts.

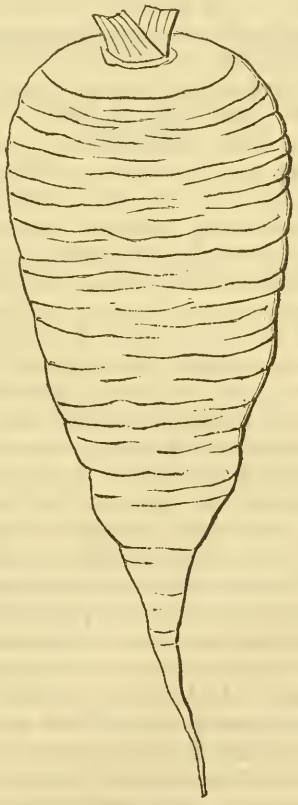
THE DIOSCOREA, OR CHINESE POTATO, is said to be growing in favor in France, and gradually becoming common in their markets.

LARGE COLLECTION OF ORCHIDACEOUS PLANTS.—M. Schiller, of Hamburg, Germany, has a collection of 1380 species, probably the largest in the world.

PRIMULA SINENSIS FIMBRIATA.—This useful plant is seldom seen to the perfection it should be, as there are very few winter-flowering plants that can be had in flower for four or five months with so little trouble as the Primula. It is both adapted for cutting from, or a display in the conservatory. I begin with sowing the seed, I think, earlier than it is generally sown, about the first week in March. I sow in pots and place them in a cucumber frame, or any other warm place. As soon as the plants are up and large enough to transplant I prick them out into shallow pans, keeping them close and warm till they get established, when I put them in a cold pit, where they remain till about the middle of May, when I pot them off into 3-inch pots, and place them in a cold frame under a north wall. The soil I use is about two-thirds rich turfy loam, and one-third equal parts well-decayed manure and leaf-soil, with silver sand enough to keep the soil open. I use the soil in a dry state, pressing it in as firm as possible. In the early part of July I re-pot into 6-inch pots, using soil as before, still keeping them under north wall with plenty of air, when they make plenty of nice, short, stocky leaves. About the end of October I place them in a cold vinery, where they get plenty of light and air. I do not let young plants flower before January, by which time they make fine plants from 12 to 18 inches through; a complete mass of flowers, and continue flowering till the end of April, when they are placed in a cold vinery near the glass, where they get plenty of light and air to ripen the seed, which is worth any trouble it takes to ripen it properly, as there is always a demand for good Primula seed. As soon as the seed is gathered, I cut off all decayed leaves and flower stems from as many of the best plants as I want to save, and re-pot them into 10-inch pots, using soil, and treating them the same as the young plants. I let them begin to flower lastly in November, by which time many of them will be from twenty-four to thirty inches through, and continue to flower till the young plants are strong and large enough. A great advantage Primulas have over most winter and spring-flowering plants, they are never infested with green-fly, or any other insect, so it is no trouble to keep them clean. As I save my own seed every season, I get none but the brightest colors and best fringed flowers.—*London Florist.*

NECESSITY OF AMUSEMENT.—The Rev. C. H. Spurgeon, the popular preacher, has diverged from the usual pulpit topics, and introduced lectures on natural history, gardening, &c. He truly says, "that the human animal needed one sort of amusement or another, and that if you did not give him the right sort, he would certainly seek the wrong. God so adapted man's nature, that he should not only attend to the necessities of existence, but seek for the enjoyment of some pleasures. It was no use his constantly saying in the pulpit that people must not go to the public house or the theatre, for the reply would be, 'We want something of the sort, and if you do not give us the right thing, we will certainly take to the wrong.' "

PARSLEY CHERVIL.—This is a wild plant of Europe,—*Chœrophyllum bulbosum*,—with a bulb no larger than a filbert-nut. It has been improved by the French to the size of the following sketch. It



has to be sown in the fall, and the roots are fit for table about midsummer.

RAISED FLOWER BEDS are coming into favor in England. They are elevated about a foot from the grass the edges supported by ornamental terra-cotta ware, and a border of gravel around the whole.

Foreign Correspondence — Scotland in the Year 1861. — A stranger, in travelling through Great Britain, cannot help admiring the beneficial effects of a stable national government, and good order of society. In the fine arrangement of things generally, every one feels secure in person and safe in his investments; and the minds of the people are so universally concentrated upon the good of the country and welfare of their sovereign, that they have become one of the most powerful nations upon earth. The country, too, is delightful with fine roads, green hedge-fences, highly cultivated fields of the farmers, and the tree-belted parks and ornamented gardens of the wealthy. After passing through the tunnel at Liverpool, and getting into the open country, upon the Caledonian Railway, the handiwork of industry shows itself in long gardens, between the tracks and boundary fences, where the ground is level or gently sloping, and the enclosures, hedges; there are strips of onions, leeks, curled greens, cabbages, &c.; and where the fences are stone or wood, there are rows of Black Currant bushes: in passing through deep cuts, the slopes are thickly covered with grass and native shrubbery, which, in Scotland, are principally heather, broom and whin (furze); and in crossing deep hollows, the embankments are planted with deciduous trees in England, and evergreen trees in Scotland; and large tracts of land, by the way, are planted with pine, larch and fir trees for timber, and mountains that formerly were bare, are now covered with such timber; and so great is the demand for these kinds of trees, that the nurseries of Edinburgh have two-thirds of their surfaces devoted to their propagation. They are planted out when two feet tall, and no uneasiness is felt about how well or fast they will grow; patience and time are the best applications for them. There is a flower-garden at every station, upon all the railways I rode on, planted with showy flowers and great quantities of mignionette, which delight the scent and sight of the passengers during the stoppages. As Ladybank's Station, in Fifeshire, is the junction of three lines merging into the Edinburgh line, I put up here for convenience of starting for different points. I will give a sketch of the flower-garden, which will give you an idea of all others. The large hotel (called Refreshment Rooms, conducted by Mrs. William Elder, one of the most generous hostesses in Christendom), with the offices attached, make a row thirty-six yards long and thirty feet deep, except the booking-office, which is eleven feet less. The flower-garden runs along the whole length of the buildings, and is twenty-five feet wide, enclosed with a pale-fence four feet high, which is lined with everblooming roses, dahlias and shrubbery. Among them are several plants of Scarlet Fuchsia, as large and as hardy as our currant-bushes, and hang full of blooms the whole growing season. The middle of the garden is layed out into flower-beds, and walks edged with Daisy, Thrift and London Pride (*saxafraga*); the beds are filled with both showy and fragrant plants, that bloom from early summer till late autumn. There are five varieties of Calceolaries that stand out all winter without protection; these, intermixed with Heliotropiums, Mignionette, Scarlet Geraniums and Salvias; Lobelia gracilis, Sweet Alyssum, Double Scarlet and White Gilly-flowers, Double China Pinks and Asters, Double Larkspurs, Drummond Phlox, Verbenas, with a strong plant of Tritoma uvaria in the centre of the beds, make a beautiful show. There is an inshot at the booking-office, twenty-six feet long and eleven feet deep; here is a greenhouse, with the small expense of putting up a front and roof, and a stage inside; a collection of showy exotics are kept in it, and tender bedding plants are wintered in it (this is an extra that other station-gardens have not). This is the only station, between Edinburgh and Perth, that the Queen alights for refreshments, on her way North, in summer, and she is always presented with a bouquet. Mr. William Elder, having formerly been a professional gardener, knows well how to please his sovereign with such a token of his loyalty. E.

[*To be continued.*]

Sequoia gigantea. — A specimen of this remarkable genus of trees, so named by Endlicher, is now growing in the south island in the Bois de Boulogne, near Paris. When it was planted (in 1859) it was about twelve inches high; it now measures nearly ten feet. If this rapid growth continue for half a century, it will attain the height of fifty-four or fifty-five yards. The full size of this tree is above 100 yards in height, and between three and four yards in circumference.—*French Paper.*

Large Apple from a Pot-Plant.—At a meeting in October last, of the London Royal Horticultural Society, a Northern Spy Apple, from a potted plant in an orchard-house, was exhibited, weighing thirty-six ounces, and measuring fourteen inches in circumference.

Fungi the Cause of the Potato Disease.—Professor De Bary, of Friburg, in Saxony, has conducted some patient investigations on the cause of the Potato Disease. They confirm the results of other scientific observers, that it is caused by fungi. The spores, or reproductive bodies of these fungi, are very small—19,620 of them having been found on a square line or space. They abound all through the tissue of the potato plant; and hence no external applications can prevent or cure the disease, as it can in the vine mildew, where the threads of fungi are spread on the outer surface. De Bary has, however, proved that it requires an abundance of moisture to make these spores spread freely. The practical inference is, that plants should be specially grown for seed. They should be grown on high and dry ground; very little manure should be given that would encourage watery luxuriance. Great width of row should be given to encourage firm, hard stems, well enured to light and air; and whenever any indications of disease appear, the injured parts should be promptly cut away. It is believed that close attention to these matters might, in time, eradicate the disease.

Pecuniary Profit of Public Parks.—A recent report of the New York Central Park, shows that, in spite of the great expenditures, it is a source of profit to the city. Recent advices from Paris show this to be also their experience with the Bois de Boulogne. The whole cost, it is said, has been fully repaid by the sale of plots on the outskirts.

A New Method of Raising Mushrooms has been invented by Monsieur Labourdette, which promises great results, and is suggestive as to the possibility of raising artificially some other useful species of Fungi which at present defy the cultivator. M. Labourdette, who has laid his method, together with specimens, before the Academy of Sciences at Paris, employs the spores of the mushroom, which are treated with nitrate of potash, or in other words with comon saltpetre, in such quantities as may not destroy the vegetative powers of the spores. A solution containing 1-30th part of saltpetre is injurious to vegetables, but it is possible that Cryptogams may be less susceptible of mischief from the salt. The soil is composed of sulphate of lime, and the spores when properly treated are covered with it to the depth of about 1-6th of an inch. The mushrooms produced are of extraordinary size. We shall hope to give details on some future occasion.

Marking Names on Fruits.—A correspondent of the London *Gardener's Chronicle*, writing of a Paris exhibition, says:

"Among fancy fruits, I observed a large dish of the favorite French Dessert Apple, the Pomme d'Api, in which each one was marked with a letter, a crest or other device, produced by placing a piece of paper or cloth, of the required shape, on the side next to the sun, causing a corresponding spot to remain uncolored."

It may be worth while for our exhibitors to turn this "fancy" to practical account, by sun-marking with numbers, or even the names of fruit they intend to exhibit.

Mule Pinks, flowering all summer, and scented like carnations, have appeared in England.

Horticultural Notices.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The monthly business meeting was held Monday evening, 16th ult.

The Report of the Committee on Schedule was presented and thoroughly discussed, and, with slight modifications, adopted, and ordered to be printed.

The recommendation of the Committee, that the room and library of the Society be open every Tuesday evening throughout the year; and that one Tuesday evening be devoted to the discussion of horticultural subjects, another to the monthly display of plants, fruit, and flowers, another to the reports of Committees and general business, and the remaining evenings to informal conversational meetings, was unanimously adopted.

A motion for a notice of an alteration in the By-Laws, necessary to carry these changes into effect, was adopted, and will come up for final action at the next meeting.

The Treasurer's Report was presented and referred to the Finance Committee. The same Committee were empowered to employ a suitable person to canvass for new members of the Society, and to collect the outstanding dues.

The Society has taken the large second-story front room at the south-west corner of Broad and Walnut Streets, which will be fitted up for their weekly meetings, and such arrangements made for the coming year as to render their weekly gatherings the most attractive in the city. A large accession of new members is confidently anticipated.

Persons interested in any branch of horticulture, and desirous of joining the Society, can do so on application to any of the present officers or members, one month prior to admission. The annual subscription is three dollars, life-membership twenty-five dollars. This entitles each member to two ladies' tickets, the free use of the splendid library, and a participation in all the conversational, discussional, and business meetings.

BROOKLYN HORTICULTURAL SOCIETY.

LIST OF OFFICERS FOR 1862.

President—John W. Degraw, Esq., Brooklyn.

Vice-Presidents—S. J. Eastman, Esq.; I. A Wallace, Esq.; Lyman Burnam, Esq.; R. W. Ropes, Esq.; Henry M. Bearns, Esq.

Treasurer—John W. Degraw, Esq.

Corresponding Secretary—C. B. Miller, No. 29 Broadway, New York.

Recording Secretary—J. C. Marin.

REGULAR BUSINESS MEETINGS of the Society on the *First Tuesday Evening of each Month*, at 7½ P.M.

CONVERSATIONAL AND EXHIBITION MEETINGS on the *Second and Fourth Tuesday Evenings of each Month*, at 7½ P.M., at their Rooms at the *Athenæum*.

AT the meeting of the Society on the 12th ult., Mr. Isaac Buchanan contributed many cut specimens of Greenhouse Plants; but the chief attraction was a Bouquet from the widow of Mr. Humphries, the Florist, which was much more tastefully arranged than we commonly see them.

Mr. Bridgeman exhibited six Tuberoses to illustrate flowering from non-flowering bulbs. He explained his mode of distinguishing one from the other, and his theory of the causes that produced the difference; but our reporter has not furnished us with the particulars.

Mr. Mead spoke of the culture of room plants. The circular or semi-circular stands he found not to answer at all—necessitating a continual shifting of the pots to enable the sun and light to get at the plants. What he found to answer best was a table, the length of the window, ledged all around; place a layer of sand upon the surface—a coat of moss might be added, and upon the bed place the pots. The table-stand should be fitted up with rollers, to allow it to be rolled into the middle of the room in case of frost. He recommended much nicety in the watering, syringing, or sponging the same, so as to keep them in a healthy condition. Frozen plants can be restored by sprinkling them with cold water, and a little fire kept up in the room. The effect of gas on plants is very disastrous, indeed. About seven years ago, when gas-mains were laid down on Myrtle Avenue, all the trees on that side died. It was not so much the light of the gas as the leakage. A plant requires as pure an atmosphere as man to keep it in health.

Mr. Pardee presented a book of natural flower-pictures, sent by Mrs. Charles Downing, of Newburg, whose fine taste in such matters is well known to a large circle of private friends.

FRUIT-GROWERS' SOCIETY OF WESTERN NEW YORK.

THE Annual Meeting of the Fruit-growers' Society of Western New York will be held at the Court House, in Rochester, N. Y., at 11 o'clock, A.M., on Wednesday, the 8th day of January, 1862. A fine show of Fruits may be expected.

By order of the Council.

C. P. BISSELL, *Secretary*.

MERAMEC HORTICULTURAL SOCIETY

THE officers of the Meramec Horticultural Society for 1862 are as follows:

President—Dr. L. D. Morse, Allenton, Mo.

Vice-Presidents—Dr. J. B. H. Beale, Eureka, Mo.; Charles Paffath, Melrose, Mo.

Secretary—William Muir, Melrose, Mo.

Corresponding Secretary—T. R. Allen, Allenton, Mo.

INDIANAPOLIS HORTICULTURAL SOCIETY.

OFFICERS.

President—George W. Mears.

Vice-President—David V. Cully.

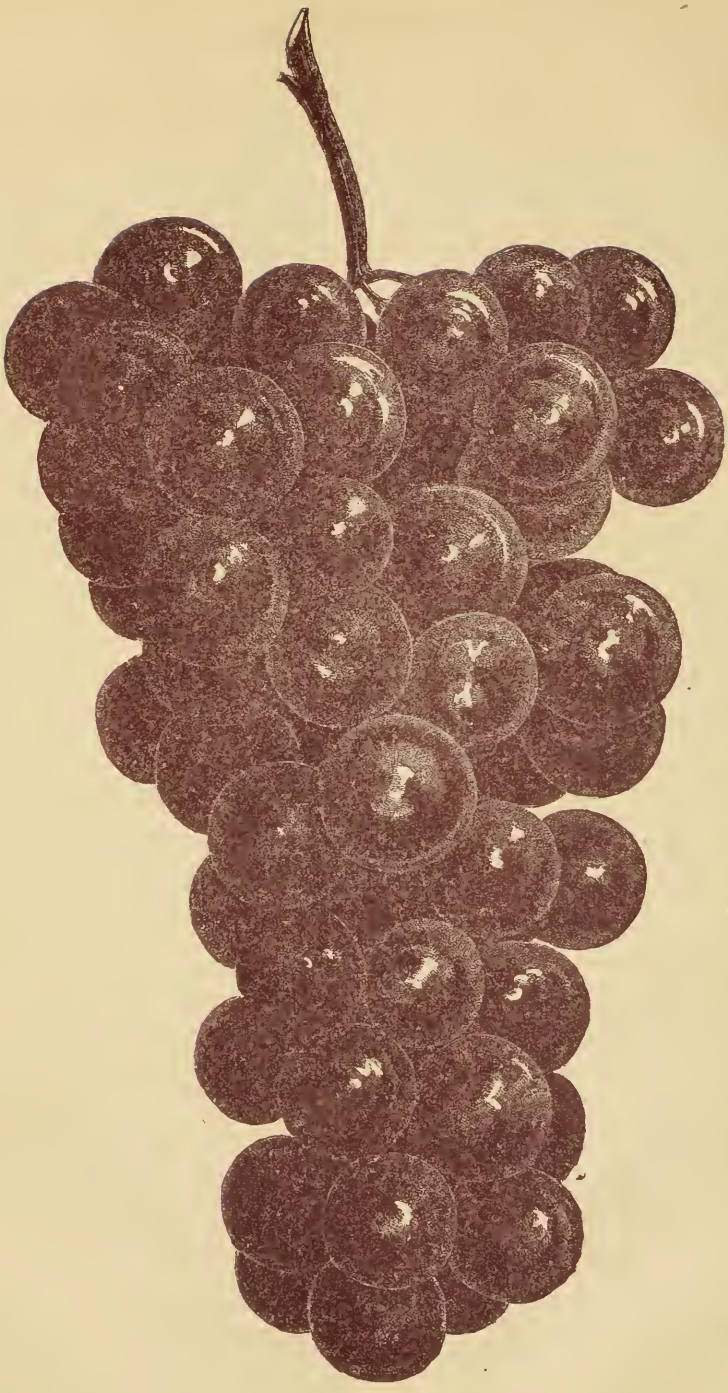
Secretary—Austin H. Brown.

Executive Committee—William H. Loomis, R. T. Brown, and J. T. Francis.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA.

THE regular Annual Meeting of this Society will be held on the first Wednesday in February next, at Cooper's Hotel, in the city of Lancaster.

By order of the EXECUTIVE COMMITTEE.



MEAD'S SEEDLING.

PHOTOGRAPHED AND ENGRAVED EXPRESSLY FOR THE GARDENER'S MONTHLY.

THE
GARDENER'S MONTHLY.

DEVOTED TO

Horticulture, Arboriculture, Botany & Rural Affairs.

THOMAS MEEHAN, Editor.
W. G. P. BRINCKLOE, Publisher. FEBRUARY, 1862. VOL. IV.---NO. 2.

Hints for February.

FLOWER-GARDEN AND PLEASURE-GROUND.

Our national trouble, in its course, has come between us and our more Southern readers, and prevents us from seeing more than a portion of that bright circle we have been accustomed to address. We are under an eclipse, now happily passing away, as strange as it was unlooked for; and we hope that, like an eclipse, the effect will be only to show how bright was our former glory, so temporarily obscured. We feel the loss particularly while writing February "Hints," when we felt called on particularly for our humble efforts in behalf of gardening "in the Southern States," at this period demanding the most attention in the "Flower-Garden" department. The last communication that ever reached us from "Secessia," but a few months ago, from a friend in Tennessee, reported that every agricultural journal in the South had suspended, and, though a strong friend of the Southern cause, begged the *Monthly* to be sent them by an "underground" route that he pointed out. The Major, our then publisher, was too true a patriot to comply, in the face of the orders of Government for non-intercourse. But the request had a meaning for us—whispering that the links which bound us together as one people were not yet all broken, and that, in the reconciliation we hoped, and now more strongly hope, will soon occur, horticulture will be one of the first to lead us to forget and to forgive the faults of both sides when under the madness that ruled the hour.

What we can say to the friends whom we can reach may as well be said next month, and so we pass this for other departments.

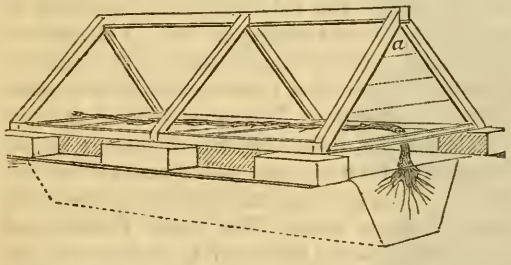
VEGETABLES.

Nothing is more relished in spring than early vegetables; and too much attention can scarcely be bestowed on any improvement tending to advance their season of usefulness. In our past volume, we pointed out how much might be done by warming the soil in the open ground by hot-air flues and other artificial means. Improvements have to fight their way, inch by inch, to general use; as what we have once done somewhat successfully, usually strikes us more favorably than new notions, no matter how reasonable they seem. We do not, therefore, expect to see many of these improved suggestions in actual operation; but we trust they will not be lost sight of by those of a progressive turn of mind. The old hotbed will, no doubt, be the standard means employed; and, by the end of the month, it will be time to think of getting these in order. *Early York Cabbage* should be amongst the first seeds sown. Too much heating material will be bad for them; two feet of manure will be abundant, with a common sash frame on the top; and after they have sprouted, all the air practicable must be given them. The *Early Winningstadt* and *Early Cone* are spoken of by parties here who have tried them as being superior to the old Early York. Early Turnip Beet, Radish, Cauliflower, and Lettuce may be sown on separate parts of the same slight hotbed, at the same time, and have the same subsequent treatment. A warmer bed, say with the fermenting materials four feet thick, should be prepared for more tender things, such as tomatoes, egg-plants, peppers, cucumbers, &c. Of course, these hotbeds should be established in sheltered places, but, if possible, with all the advantages of early morning sun, which has an incalculable advantage on the earliness and general health of vegetation. Where the sides of the hotbeds are exposed to cold winds, great advantage is derived

from placing board shutters or brushwood around to shelter them. If plenty of manure is at command, and plenty of labor to renew linings occasionally, as the temperature of the beds fall, this care for preventing loss of heat is not so much an object. We never could see why farmers and others, who usually have large quantities of manure piled up against the walls of their barnyards, might not have these walls "pigeon-holed," and, with frames on the outside, have an abundance of early vegetables at a trifling labor and expense, with heat that is now in every sense wasted away. We are told that the Dutch in Holland make hotbeds on the top of their pigsties, so that they may have the additional advantage of the heat given out by the crowding of the porkers beneath. Surely the barnyard hint, therefore, is worthy of some thought.

Very much may be done in the forwarding of early vegetables by using glass alone, without artificial heat. "Hand-lights," as these things are called, are considered essential to all well-appointed European gardens. They are usually made square, of cast iron, and glazed with glass, puttied in.

Cucumbers, cauliflowers, squashes, and marrows are thus brought to perfection in that climate, which could scarcely be grown at all without them. Recently, the English have been growing hothouse grapes in that way, training the vine along the ground, and the glass structure made as in the following sketch:—



We are sure our growers can turn the idea to many valuable accounts.

FRUIT GARDEN.

Pruning of fruit trees, when required, should be proceeded with at favorable opportunities. We write "when required," for, in our climate, more injury is done by the knife than by the neglect to use it. Gooseberries, for instance, are usually ruined by pruning. In Europe, it is customary to thin out the centre well to "let in the sun and air." Here it is the sun and air that ruin them, by inviting mildew; and so the more shoots, the better. Our country farmers are the best gooseberry-growers, where weeds run riot, and grass and gooseberries affect a close companionship. Wherever, in fact, the gooseberry can find a cool corner, well shaded from the sun, and with a soil, which, never wet, nor yet by any means dry, there will gooseberries be produced unto you. The English kinds mildew so universally, as to be almost gone out of cultivation south of the St. Lawrence. Nor, indeed, is it to be so much regretted, since the improved seedlings of large size and fine quality, raised from the hardier American species, are becoming known, and their merits appreciated by growers.

The rule, in pruning grape-vines, is to shorten the shoots in proportion to their strength; but, if the advice we have given in former summer hints has been attended to, there will be little disproportion in this matter, as summer pinching of the strong shoots has equalized the strength of the vine. Those who are following any particular system will, of course, prune according to the rules comprising such system. As a general rule, we can only say, excellent grapes can be had by any system of pruning; for the only object of pruning in any case is to get strong shoots to push where they may be desired, or to increase, with the increased vigor of the shoot, which pruning supposes will follow the act, increased size in the fruit it bears.

Manuring of grapes should be regulated by the nature of the soil. If it be damp—in most cases a bad condition for grape-growing—stable manure in great quantities means diseased vines. In dry ground, it has a beneficial effect. Many persons of small places have grapes in damp ground, or can have none. They must take care to keep the roots near the surface; never crop the ground about them to destroy the small fibres, if it can be avoided; and even good may often follow, when the vines seem failing, to carefully follow up the roots, lift near the surface, and encourage, as much as possible, those remaining there. Wood-ashes, bone-dust, and such like fertilizers are best for grape-vines in low ground.

PLANTS AND PLANT HOUSES.

In our last, we spoke of the advantages of manure water to plants when growing freely. This is dangerous advice in unexperienced hands, as it may be made too strong, and injury to the plants result.

For general purposes, a garden-shovel full of rotten hotbed manure, put in a barrel of water, and suffered to remain till it becomes clear for using.

Liquid manures made from guano, and other concentrated fertilizers, should be employed only by skillful hands. Narcissus, hyacinths, and other bulbs, that have been in pots and glasses, kept cool and dark as they should be, may some of them be brought forward gradually to light and heat, and a few every week for a succession of bloom. Mildew frequently makes its appearance in greenhouses at this season. Flowers of sulphur in water syringed through the plants, is the best cure. The best preventive is to look well to the general health of the plant. Any derangement is likely to produce disease.

Neat, well-formed specimens of plants are now held as desirable as well-flowered plants. To get these, as the strong shoots grow, pinch them back with the finger and thumb, not touching the weaker ones unless it is desirable to make them branch to fill out an open space. Where the shoots grow thick together, tie out by light stakes to let the air and light in equally to all parts of the plant. Where the wood is hard, and a shoot is wanted to break out, a notch cut in above the place desired will generally accomplish the object—not too deeply, or the part above will suffer as if the branch had been ringed. If Fuchsias are wanted to bloom early, cut back a few now that flowered last year, repot, and grow in a heat of about 45°. and they will bloom in March. As a rule, with most plants it is best to let a plant push half an inch or so of its new growth before repotting, as the roots do not move until some new growth is made; and they do best when the roots push at once into newly potted soil. Soil constantly watered, without healthy roots growing through it, soon becomes "sour." Ventilate whenever the external temperature is above 45°, unless cold winds are blowing, which will soon make your leaves look brown.

Communications.

THE PÆONY ONE OF OUR MOST NORTHERN PLANTS.

BY W. R. PRINCE, FLUSHING, N. Y.

Pæonia tenuifolia, the *Fennel-leaved Pæony*, is the next in importance. There are three varieties, with single flowers, which are crimson, purple, and roseate, and a very full double deep crimson variety of great beauty. It is a native of Siberia, and, like all other Siberian plants and shrubs, is among the first to expand its foliage and its flowers. Like the P. paradoxa, it is more dwarf than the Sinensis and officinalis families first described; and its very peculiar foliage distinguishes it from all others.

PÆONIA TRITERNATA, the *Daurica* of some authors, is another Siberian species, with purple flowers, from which they have obtained, in France, one seedling variety, with double flowers. Both these are readily distinguished by their triternate foliage.

PÆONIA PEREGRINA, or *Turkish*, is a native of the Levant, and comprises two single flowering varieties, whose flowers are dark purple, with a marked peculiarity in their pubescent foliage.

PÆONIA DECORA, or *Comely*, is also a native of the Levant, and comprises two single flowering varieties, both of which have purplish crimson flowers, with golden stamens, and pubescent foliage.

PÆONIA HUMILIS is a native of Spain, the most dwarf of any species, and comprises two varieties, with violet, roseate flowers, and soft, downy foliage.

PÆONIA CALIFORNICA and BROWNII.—The first-named is a native of Upper California, and has blood-red flowers. The other is found on Mount Hood, in Oregon, near the region of perpetual snow, and has reddish purple flowers.

PÆONIA WITMANIANA is a Chinese species, with single yellow flowers, and is one of the most rare. It is from this species we may hope to obtain double bright yellow varieties, more deep-colored than the yellow and straw-colored varieties of the Albiflora family.

Of other species, from which no seminal varieties have been yet produced, there are *P. russi*, or Sicilian crimson: *P. lobata*, a Spanish red flowering species; *P. anomala*, or Siberian jagged-leaved, with pink flowers; *P. hybrida*, or Siberian hybrid, with red flowers; *P. arietina* and *P. mollis*, both natives of the Levant, and both having purple flowers; *P. pubens* and *P. villosa*, both natives of Sicily, with downy foliage and red flowers; and lastly, *P. cretica*, or Cretan, a native of the island of Candia.

I omitted to remark, under its proper head, that the roots of the Pæonia albiflora family are edible, and are used for food in some parts of Northern China, Tartary, and Siberia.

THE VARIETIES OF THE PÆONIA MOUTAN.

THIS is the most splendid and showy of all flowering shrubs, and as yet it is among the most rare in our American gardens. The different varieties bloom in May, ten to fifteen days before the Chinese Herbaceous Pæonies, and the flowers are mostly fragrant. Independent of their sustaining the severest cold, there is no class of shrubs that is

of more easy culture. Once planted in a good soil, they will exact no further care.

I have already referred to the three varieties originally introduced from China, and to the magnificent collection of above twenty varieties obtained there by Robert Fortune, which have now become disseminated to several European gardens, whence I have at great expense obtained them. I have also originated from seeds, during the last fifteen years, twenty-two most gorgeous varieties, whose flowers are of the largest size, and comprising white, roseate, crimson, lilac, purple, and variegated shades. In Europe, they have originated more than eighty splendid varieties in the same way. These it is unnecessary to enumerate here, as they are all specially named and described in our catalogues.

THE VARIETIES OF PÆONIA ALBIFLORA VEL SINENSIS, CHINESE, AND SIBERIAN HERBACEOUS PÆONIES.

I HAVE already remarked that there are above two hundred and fifty varieties of this species which have been originated in Europe and by ourselves. These comprise every shade which the limitations of nature will permit this flower to combine. They may be advantageously divided into groups, each comprising the shades of a particular color; but there are also some other distinctions, such as belong to those choice varieties which have the outer petals of one color, and the central petals of a distinct color; another class, the Anemone-form, with large outer petals, and the central ones small and fringed; and a third, of which the various flowers are protuberant, the centre being crowned with a tuft or coronet, which renders them particularly showy and interesting. Their period of bloom extends throughout the month of June. Much the larger number of these varieties are fragrant, and several are exquisitely perfumed. I will name a few belonging to each of the different groups:—

FLOWERS WHITE OR NEARLY SO.

Sulphurea,	Papaveriflora,
Nivalis	Humea alba,
Festiva perfecta,	Grandiflora nivea,
Nivea plenissima,	Sinensis alba.

FLOWERS TWO COLORED. (*Centre distinct.*)

Charles Gosselin,	Madame Carpentier,
Comte de Paris,	Victoire tricolor,
Formosa,	Tricolor nova,
Insignis,	Washington.

FLOWERS BLUSH AND INCARNATE.

Carnea elegans,	Lady Dartmouth,
Carnea-flore pleno,	Lactea variegata,
Chrysanthemiflora,	Lutetiana,
Edulis alba,	Poiteau,
Gloriosa,	Princeps,
Guttata,	Vicomtesse de Belval,
Incarnata plenissima,	Van Hordii.

FLOWERS ROSEATE AND PINK.

Albiflora rosea,	Ne plus ultra,
Beauté Francoise,	Plenissima rosea superba,
Buyckii,	Princesse Mathilde,
Plenissima variegata,	Reevesii,
Centripetela,	Reine des roses,
Edulis superba,	Rosea delicatissima,
Grandiflora rosea,	Sulphurea rosea,
Victor Paquet,	Tricolor extra.

FLOWERS ROSY LILAC.

Duchesse d'Aumale,	Triumphans,
Reine des Francois,	Versicolor.

FLOWERS ROSY VIOLET.

Arsene Meuret,	Mutabilis,
Duchesse d'Orleans,	Perfection,
Edulis or Fragrans,	Speciosa striata,
General Bertrand,	Tricolor grandiflora,
Hericartiana,	Triomphe du nord,
Modeste,	Victoire Modeste.

FLOWERS YELLOW, STRAW, OR WITH YELLOW TINGE.

Bicolor,	Flavescens,
Festiva,	Lutea plenissima.

FLOWERS WITH CORONET CENTRE.

Globosa nova,	Queen Victoria,
Latipetela,	Queen's perfection,
Lingulata,	Prolifera tricolor,
Baronne Rothschild,	Triomphe de Paris,
Nobilis,	Carnea alba.

FLOWERS PURPLISH CRIMSON AND LILAC.

Decaisne,	Princei purpurea,
Delachei,	Pottsii,
Louis Van Houtte,	Purpurea superba.

FLOWERS BRIGHT AMARANTH.

Comte de Niepperg,	Amaranthescens spherica,
Doctor Caillot,	Prince Prosper.

FLOWERS ANEMONE-FORM.

Anemoneæflora alba, Madame Breon,
Amabilis lilacina, Walneri.
Latipetela rosea alba.

CULTURE AND SOIL.

Of all the gorgeous flowers that adorn our gardens, there are none which exact from us less care in their culture than the plants of this class. They prefer a northern exposure, and will sustain the severest Canadian winters. They flourish in any ordinary soil, except one quite sandy; but a rather stiff, yet friable loam, well drained, suits them best; and, after being thus planted, no further attention will be required. As the plants expand until they form very large stools, they may, if desirable, be readily divided from time to time, and thus a small number of plants may, in a few years, be made to ornament all the borders of an extensive garden. The directions which I have here given will equally apply to all the herbaceous species.

MANETTI ROSE STOCK.

BY JOHN SAUL, WASHINGTON CITY, D. C.

At page 332, Vol. 3d, are some remarks on the Manetti Rose Stock, by Mr. F. Parkman, in which he notices the very vigorous growth of many varieties on this stock the first year after planting; whilst others were weak and dwarf in growth. Among the latter, I find "La Reine," which with me has invariably succeeded well on this stock; indeed, I have found all varieties succeed well on it—take freely, and grow vigorously—in proportion to the character of the variety. Yet I am not prepared to say that varieties will not be found to which this stock will prove uncongenial, as my experience as a cultivator reminds me that, however applicable or valuable a stock may be to any class of plants or fruits, there are exceptional cases of varieties that will not unite freely with it; or, if a union is effected, there is very little after-growth.

In England and the continent, the Dog Rose is cultivated as a stock more extensively than any other; yet many of the very finest roses refuse to grow upon it. In fruits, every nurseryman is aware that all the varieties of Pear will not succeed equally well upon the Quince; nor will all the kinds of peaches form alike healthy, permanent, and vigorous union on the common Blue Plum Many of the finest varieties, when worked upon Plum, require a different variety for a stock. We need not, therefore, be surprised if a sort be occasionally found to which this stock is not congenial.

Of the second year, Mr. Parkman says: "The plants were carefully taken up, and re-set a little deeper, in order to give protection to the point of junction of the scion and stock. A few grew and blossomed with all their former vigor; but in general they have shown a diminished vitality as compared with the *previous* year; and in some instances this deterioration has been very marked."

From the above, I infer the Roses were re-set in their former positions. If in this I am correct, it accounts sufficiently for their diminished vigor, as no plant requires a change of soil more than the Rose. Had the plants been allowed to remain undisturbed, they would doubtless have grown more vigorously than if taken up and re-set in the same ground. I am aware that some excellent cultivators have recommended this practice; but it is one which I could never endorse. Much better change them to any ground, if only moderately good, with a little manure added, and dug over. The change will be of immense benefit. But the preparation of the soil, as done by Mr. Parkman, in the first place is infinitely better. Rose amateurs well know how difficult it is to get strong, vigorous plants, of many of the finest varieties, which are delicate or slow growers, upon their own roots, such as Cardinal Patrizzi, Dr. Henon, Eveque de Nimes, General Castellane, Gloire de France, Madame Masson, Prince Leon, Sir John Franklin, Triomphe de Paris, Imperatrice Eugenie (H. P.), Virginal, Arthur de Sansal, Bacchus, Ornament des Jardins, &c., all of which I find to grow vigorously and flower superbly on this stock. When I say "vigorously," I use the term comparatively, not pretending this or any other stock can impart to such the vigor of the freer-growing Hybrid Perpetuals. Those dwarf growers are much benefitted by an annual or biennial removal to fresh ground. When this is performed, any suckers, or the rudiments of suckers, which show themselves on the stock, should be removed. Under this treatment, plants will grow with all their original vigor.

Writing about Roses reminds me of some new varieties which have bloomed in my collection the past season, and which can be safely recommended, viz., Celine Forestier, a new yellow noisette of free growth, and apparently more hardy than many yellows in this class; Admiral Nelson (H. P.), brilliant crimson, of fine form, very vigorous, a beautiful rose; Adolphe Bossange (H. P.), clouded purple, very large and full, distinct and fine; Belle de Bourg. La Reine (H. P.), satin-like rose, very

large and full, robust grower, superb; Duchesse de Magenta (H. P.), flesh color, changing to white, vigorous grower, distinct and pretty; L'Elegante (H. P.), buds pink, opening of a clear flesh color, large, full, and of good shape, a superb rose; Louis the XIV. (H. P.), fine rich purplish crimson, very fine; Madame Boll (H. P.), rose color, edged with blush, large full flower, a vigorous grower, beautiful; Madame Eugene Verdier (H. P.), deep pink, large, full, finely shaped, growth vigorous, beautiful; Souvenier de Monteeau (H. P.), scarlety crimson, shaded with maroon, color splendid; Vainqueur de Solferino (H. P.), very dark red, centre brighter, large, full, blooming profusely; Victor Verdier (H. P.), rosy carmine, purplish edges, a large, showy, free-growing rose, of good quality, superb.

A LITTLE ABOUT RASPBERRIES.

BY QUERCUS.

Noticing the varied opinions respecting the so-called Allen Raspberry, I believe a little of history may perhaps be well just at this time.

In 1828, or thereabouts, an English gardener brought to and planted in a gentleman's garden, in Cleveland, a Raspberry without name. It grew freely, bore abundantly good-sized fruit, good flavor, a little too soft for distant carriage, fine for jams, canes perfectly hardy. These qualities in those days, as at present, rendered the variety a valuable one; and as the "Red Antwerp" was the standard variety, without other knowledge this was dubbed by that name. Subsequently, when the true Red Antwerp came to be known here, it took the prefix of "False," and now stands known among the first men of Cleveland as the "False Red Antwerp." It is largely cultivated by the market gardeners; and, from its being perfectly hardy, and producing abundantly, it still continues a favorite sort. At this time, however, there are three varieties, originating, without a question, from seeds in the original plantation, as they have been distributed more or less among every plantation. One only of these, from the original sort, is deemed valuable; and growers, from time to time, pull up and destroy the poorer sorts as they show themselves in a plantation; some plantations at this time being entirely free of the worthless sorts, others having a few in them. Of these two seedlings, one closely resembles the parent in fruit; but the canes are slightly more downy, and its tendency to sucker is about doubled; while, at the same time, its bearing quality is reduced nearly one-half. Another has canes more downy, tendency to sucker largely increased, while its productive powers are very indifferent; in fact, a great proportion of its blossoms are imperfect, and without close proximity to some other sort, it sets but little fruit, or, if it sets, the berry is very imperfect. So much for what is known at Cleveland as the False Red Antwerp Raspberry.

And now for a little history of the so-called Kirtland Raspberry. Some years since, before nurseries were abundant hereabouts, and people found it difficult to procure new and valuable fruit, Prof. I. P. Kirtland was in the practice of distributing to his friends and the public, with a free hand, all his surplus plants of any sort. To Mrs. Follet, of Sandusky, the Professor, some years since, gave of the False Red Antwerp, Fastolf, and Franconia Raspberries, a few plants of each, the former being hardy, and the latter tender. After a time, the tender sorts died out, while the hardy one attracted the attention of H. B. Lum, of Sandusky, who, without knowledge of its character, and with a knowledge that it came from the garden of Prof. Kirtland, named and sent it out as a seedling of the Professor's, and with the name of Kirtland attached. So much for what is now known as the Kirtland Raspberry.

Next let us have a little of the Allen Raspberry history. In 1850, I think it was, a gentleman of Cleveland sent to W. H. Sotham, Esq., then an occupant of lands of Lewis F. Allen. Esq., one thousand plants, gathered indiscriminately from a plantation of the False Red Antwerp Raspberry. And now, having obtained and three years tested varied plants received by others from Mr. Allen's grounds, that person is prepared to say that the Allen Raspberry embraces all the varieties above enumerated under the history of the False Red Antwerp. Thus the cause of so much disagreement, as to its value, by growers who have received it from Mr. Allen. It will be recollected, in justice to Mr. Allen, that he does not claim it as a seedling of his own, but that his gardener found it in his grounds, and, not knowing what it was, chose to immortalize (?) his name by attaching it to the berry. In justice, however, to the public, Mr. Allen, before sending it out, should have carefully examined his plants, and sent out only the really valuable sort; then, as report says of some foreign dealers, he would have done no injury to any one, because he would have sent them a really valuable sort, even if they paid double the price at which it could be purchased under its true name.

GRAFTING THE GRAPE.

BY CHARLES B. OTT, PLEASANT VALLEY, BUCKS COUNTY, PA.

LAST spring, I tried a method of grafting the vine, which, I think, has some advantage over the common mode. About the second week in April last, I grafted a Frost grape with the Delaware. I laid down the vine the same as if making a layer, and inserted a graft about every foot apart. I split the vine, and inclined the grafts a little forward. The grafts were cut the same as for cleft grafting; the grafts used had two eyes, and filled up with good mellow soil to the upper eye. The vine was about an inch thick, and I inserted grafts as far up as it would hold them. I left a part of the vine out of the ground at the top end to keep up a flow of sap; about three-fourths of them grew. Some of them have made a growth of more than fifteen feet.

MISCELLANEOUS SKETCHES.

BY ORCHIS.

SITTING by my cosy office fire on this bright Christmas morning, contemplating the progress that horticulture has made within the past few years, and more particularly forming a comparison between the season, now drawing rapidly to a close, with those of previous years, I concluded, dear *Monthly*, to send you my abstract musings as an honest, hearty greeting.

Possibly many of your readers that one year ago were conning your happy pages, are to-day treading their lonely sentinel beat upon the shores of the Potomac, or in the western camps; and whilst old England is "on a perfect rampage," we, who have been throughout our lives devoted to the truths and pleasures of horticulture, must experience a sorrowful check upon our efforts, as we continue on the even tenor of our way.

From my window, looking out upon the lawn, although all nature is robed in its fleecy drapery, yet the landscape is enlivened by the merry chirp of the snowbird, trilling forth its gladsome Christmas carol; the rich, dark-green foliage, and stiff, erect habit of the firs, contrasting beautifully with the lighter verdure and graceful, pendant boughs of the deodar, forming, with the other evergreen members of the *coniferæ*, a pleasant, happy commingling of summer-like colors that almost entirely robs "old winter" of its dreariness. Could we all learn to love the beauties of nature more, and ambition less, what a vast number of the ills of life might be avoided!

As regards our moral nature, it is incumbent upon us to take a retrospective view of the past year, with an earnest resolve to correct our imperfections in the future: and so will a highly beneficial effect be produced by following a similar course in our out-door labors.

In considering the subject of Pomology, we find that the grape has evidently received more attention, during the past season, than any other fruit; and we must all feel highly gratified by the great improvements, and apparently earnest desire, to obtain knowledge in its profitable culture. The largely augmented list of varieties which although in some instances are sadly calculated to mislead, is, in the main, worthy of high emulation, and conducive of a happy influence in grape-culture.

For the Strawberry-grower, we have now varieties of enormous productiveness, as well as new varieties of luscious flavor and superior size; but here a want is left unsupplied, a plant combining all of the above requisites within itself; and, although such a desideratum has frequently been announced, upon careful trial the new candidates have not fulfilled our expectations.

Throughout the Middle States, the past year has not been eminently a fruit season, although in some sections excellent crops have been obtained; nevertheless, we can be thankful for an unexcelled growth and healthiness of vegetation. In many places, the Peach has apparently lost all appearance of that dread disease, the Yellows, and was once again clothed with a rich, dark-green verdure, being a prophetic evidence of the good things in store for the fortunate owner, the succeeding season. This disease has always been a mystery; and, although many theories, with their attendant remedies, have been advanced, nothing reliable has as yet been ascertained. Attention and careful cultivation are the best preventives; and he who neglects these is undeserving of a recompense.

Among other varieties of fruit, but little addition has been made to the list of varieties; but an indefatigable attention and study by a large majority of our fruit-growers, as is evidenced by the journals, is a sure indication of the rapidly increasing importance of the subject.

In the ornamental department of Horticulture, the taste for adorning our homes in the country, and especially those in the rural districts, is steadily increasing.

Yearly, the number of interested arboriculturists is enlarged, and I think never more so than during the past season, if an earnest desire to procure new species, and an evident wish to derive knowledge

on the subject, be a sufficient proof. This is as it should be; and the time is fast approaching when the rural homes of the American people, although not equalling in grandeur the ancient parks and pleasure-grounds of the Old World, will vie in neatness and harmony with those of any other country.

Landscape gardening, when governed by the principles of true taste, is calculated to elevate and improve the mental faculties of our intelligent and enterprising community; but it consists not in placing trees in heterogeneous clumps and masses, with an occasional solitary tree standing as a sentinel over the misapplied system; nor is it consistent with good taste to allow an absurd extravagance of the picturesque order to prevail. The true end and aim of every intelligent gardener should be to so shape his views as to combine the beautiful in every situation; to assist nature in forming an artistic combination that will please, instead of distracting the eye; to endeavor, by a judicious selection and planting, to eradicate the impression that any regular system of arrangement was adopted; but at the same time preserving the beautiful variety and unstudied grace as displayed in our natural landscapes. And he who wishes to create a pleasant home feeling, and to inculcate in his children a respect and veneration for the associations connected with events transpiring around them, cannot devise a more feasible plan than to embellish and adorn that home wherein their earliest remembrances are clustered; and, instead of being the means of inducing them to find enjoyment in disreputable places, it will be a source of gratification for them to linger around the old homestead with more refined and elevated feelings, and be better calculated to sustain the characters that they are destined to fulfil through life.

And so, dear *Monthly*, ends the first of these rambling sketches. The next may be of a more practical character, and will contain such hints and successes that have come under my own experience during the past year. With an earnest desire that you may succeed, and be profitable and remunerative to yourself, as well as you certainly are to your patrons, is my sincere desire.

CRANBERRY CULTURE.

BY S. H. J.

The cultivation of the Cranberry is attracting such general attention, and in the counties of Ocean and Burlington, New Jersey, has proved so successful and profitable, that, in a few years, it bids fair to claim position among our most important crops.

My attention has been given to the manner of cultivation as practised by those most successful and I have arrived at the conclusion that, to secure an average crop, the farmer must have the power of irrigating, or, rather, *flooding* the vines during the months of June and July, after the young fruit is *set*, as a protection from the *worm*.

It is neither necessary nor beneficial that the vines be submerged, but simply a sufficiency of water to cover the ground equally, an inch in depth, which destroys the larvæ. To accomplish this, it is requisite that the ground be very nearly level, in order that all portions may receive their share without the necessity of submerging any of the vines, as this has been found to be very injurious in those months.

Although the general practice is to gather these berries in October and November, considering them ripe because they have attained their size, and, to a certain extent their color, yet I am of the opinion that this berry, to arrive at full perfection, must be left upon the vine during the whole winter. Like the persimmon, it requires the action of frost before it is ripe.

In the state cranberries are now brought to our markets, they are not only acid and acrid, but dry and porous; but the berry as found in the *bog*, in the month of February and early in March, is plump and of a deep red color, filled with a juicy pulp of a delicate subacid flavor, very agreeable to the taste, requiring no more of sugar than a Morello cherry, to be made into a delicious jelly.

In this state, it is true, they could not be packed into barrels and boxes for transportation; but they would bear as rough usage as cherries, and their superiority over the berry as we now have it in our markets, would more than remunerate the buyer for the additional cost, not to mention the great saving of sugar, which, if these *times* continue, will be an item.

This fact is, I think, well worthy the attention of those who cultivate the Cranberry as a matter of profit; but to those who raise them for their family use, it not only supplies them with a very superior fruit, but they are better preserved from decay by leaving them on the vines than in any other manner.

Peaches in Minnesota.—The *Minnesota Farmer and Gardener* says that peaches are raised there by training the branches along the ground, and covering them in winter. Orchard-houses, it says, have not yet been erected within the State.

THE PATENT-OFFICE SEEDS.

BY H. A. D.

YOUR remarks under the caption of "New and Valuable Flower Seeds" are so just, and coincide so nearly with my own views on the subject of Government entering into competition with nurserymen and seed-dealers in distributing seeds gratuitously and indiscriminately over the land. It is time that the press should speak out plainly on this subject; and much credit is due to yourself, as well as the *North American*, of this city, for exposing "this scandalous waste of public money." It is hoped that the Agricultural and Horticultural press will take up this matter, and expose it thoroughly. It is not only a waste of money and imposition on the public, but an injury to a large class of our citizens who are engaged in the business of growing, importing, and selling seeds. As well might Government engage in any other trade, to supply the wants of the country, as to furnish the ordinary seeds, which may be had in any seed store; many, indeed, so worthless that no respectable seedsman would keep them. It is degrading to the character of the profession in this country; and foreign horticulturists and botanists must entertain a very contemptible opinion of us, if the Patent-office seeds are taken as an index of our intelligence and advancement in this department.

As I understand it, the original design of the Patent-office was to distribute new and rare varieties of *agricultural seeds*, procured through our consuls abroad, or by our ships of war on foreign stations, to promote the interests of the country by the introduction of new and improved cereals, grasses, and vegetables. The present system has grown up to give some political favorite a snug office, and an opportunity to make a "trip to Europe," the investigations for "new seeds" not extending further than the London or Paris seed stores; and some one evidently secures a "fat job" at the expense of Uncle Sam.

Private enterprise is now sufficiently active to introduce all the novelties as they may appear in Europe, and we keep well posted up on these subjects by our own as well as European publications, and the circulars of European dealers. If our Government would imitate the example of foreign Governments, and send a few practical botanists to distant and unexplored countries, some benefit might accrue; but, as it now is, we are only becoming the laughing-stock of the scientific world.

Complaints have frequently been made by country storekeepers that their sales of garden seeds have fallen off very considerably, from the fact of the neighborhood having been supplied by the *United States Seed Shop*, through their members of Congress.

[The above was received after our own remarks were written and sent to press last month. In many respects, the writer's views agree, it will be seen, with those we expressed. There may be ground for difference of opinion on some others; but the subject is one that will bear a considerable interchange of views.—ED.]

GRAPE CULTURE.

BY DR. L. W. PUFFER.

Is Bright's plan to be recommended? We say, No, decidedly! and believe, after two years' trial, that no experienced, conscientious person, whether amateur or gardener, could praise it. It may not be pleasant to record one's failures; but is it not a useful practice? But to commence: In the spring of 1860, I built a cold grapery, 21 by 30 span roof, fronting south; border *all inside*, 2½ to 3 feet deep; walls stone, and cemented. The border is composed of good loam, charcoal, bones, lime rubbish, oyster-shells, and manure, after Allen's plan. I put in five rows of vines, two feet apart, sixty in all—vines from three to thirty-six months old. Nearly all the two-year-old vines have grown best. Ventilation is by two feet wide, running the whole length of the house. It should have been *four*. I have the same amount of bottom ventilation, have used it but little, and, in building again, should omit it. With the vines trained nearly perpendicular, it is almost impossible to keep up the necessary humidity in the house. Three hours spent per day in watering will keep it in tolerable condition. Will it pay to do so with all the pruning, tying up, and thinning out to attend to? I think not. On a clear day, with unclouded glass, a good sprinkling is obliterated in less than half an hour. The first year, I washed the glass with size made of boiled flour—this season, with a good coat of whitewash. Even this does not reduce the temperature of the house but five or ten degrees, the thermometer standing one hundred and ten and one hundred and fifteen degrees, with a tank four by five feet, and about six inches deep. Whitewash disfigures the glass. Cannot some one invent a stain or wash that will answer a good purpose, and look well? Could not good grapes be grown under ground glass?

I do not question the fact that good grapes can be grown in an inside border. So they can be in

pots—but how much more care, labor, and experience to that required to grow them in an outside border! Blondin walks the Niagara, but who recommends the practice? Is it to be the chief end of the grape-grower to fruit the vine in the most anomalous condition possible. Food *may be* introduced into the stomach through the nostrils; but what is gained by experiments in that direction? It may be a pleasant pastime for those who have nothing else to do to grow grapes in an inside border, even with detachments; but my impression now is that no sensible man would try it more than two years. It is too much like infant tending; a little of it is pleasant; but who wants to be wet nurse for sixty grape-vines every summer of their life? My vines, at the end of two seasons, are about one-half or two-thirds as large as they probably would have been had they had the benefit of an outside border, judging by the growth of those in this vicinity. Looking at them, I am constrained to believe in the words of an old gardener who for years has carried off the first prize for grapes at the "Massachusetts Horticultural Exhibition," that "an outside border is good for 'em."

I think Mr. Bright erred in recommending his plan of culture to other than gardeners. They could not *easily* be misled; and I feel confident that in nearly every case those adopting it will lose one or two years time, nearly the whole interest on their original investment, be at the trouble of making an outside border, perhaps marring other plans, besides being unpleasantly sensitive to the subject of borders whenever alluded to.

I cannot close this communication without alluding to the excellent article of Mr. Matheson in the November number on grape-growing. So far as my experience goes, I can endorse every word of it, especially the importance of having a flue, having lost the foliage of my vines in a single night; and at this time (October 25), the wood not entirely ripe. The same thing might happen in spring, with perfect loss of fruit. It will pay to have a flue, if only to keep out frost after the vines push. Bright's plan *may* in the end be productive of good. It will certainly give people trying it *experience.*

CRACKING OF EXOTIC GRAPES.

BY JAMES MATHESON.

In your February number for 1860, at page 59, a subscriber at Skaneateles, N. Y., inquires the cause of the cracking of the Muscat Blanc Hatif grape.

A successful experiment which I made upon the above variety of grape, the present season, will indicate the *remedy*, and perhaps serve to explain the *cause* of the cracking to which this variety is peculiarly liable.

About the 15th of June, after the berries had attained their full size, and before they had commenced to color, each bunch was carefully suspended from the trellis wires, so as to relieve the stem, as far as possible, of its weight; then, with a sharp, thin-bladed knife, an incision was made in the stem, with a sloping, upward cut, about three-quarters of an inch in length, and to the depth of about one-half the diameter of the stem. This checked the exuberant flow of sap to the fruit; the berries ripened perfectly, and hung upon the vines, plump and sound, until *the 15th of November!*

This delicious grape, which has no superior in flavor, has been banished from most vineries on account of its almost universal tendency to crack. When the vine is grown in an inside border, and the watering judiciously managed, this may be sometimes prevented, although it not unfrequently cracks even when grown in pots. It would seem that the sap, in this variety, flows with unusual freedom, and with undue determination to the fruit; the skin being thin, cracking and bursting of the berry necessarily follow.

For its earliness, abundant bearing, and high musky flavor, this variety is worthy a place in every vinery, and well repays the small amount of time and care required to insure a perfect crop. It is called, by the English, Joslyn's St. Albans, and, by many French growers, Chasselas Musqué.

FUNGUS IN CUTTING BEDS.

BY THOMAS MORGAN, LYONS FARMS, N. J.

There has been a very general difficulty in raising cuttings in consequence of the fungus usually found in the cutting beds. I have overcome this obstacle by not changing the sand in the beds. For five years in succession, I have used the same sand, frequently stirring it in warm weather, that the air may circulate. By this means, the germ of fungus is destroyed; while the sand seems just as good for raising plants. I think a five years' trial is good for something; and, if my experience can be of use to others, I shall be glad to have it known.

La Constante Strawberry.—Hovey's *Magazine* says it has tried all the foreign kinds, and amongst them finds La Constante excellent.

HISTORY OF THE NELUMBIUM LUTEUM.

BY COL. R. CARR, WEST PHILADELPHIA.

Having been absent from the city, I did not receive the December number of your magazine until recently; and I observe that you very correctly notice the discrepancy of dates in my communication relative to the *Nelumbium*. But I believe my only error is in the *note* mentioning the date of the *new stone house* in 1731. The old house in the garden was built in that year; but Mr. Bartram built another *stone house*, about twenty years afterwards, on the property north of the garden, near Gray's Ferry, for his son James (now occupied by his grand-daughter, Mary Gibson); and this last must have been the house mentioned in Mr. B.'s letter.

I am certain that Mr. William Bartram told me that his father planted the *Nelumbium* in Brogden's Creek, below Philadelphia; and nothing could make me, or any one who ever knew Wm. Bartram, entertain a shadow of doubt of his veracity. But I never heard him mention the plants in Old Man's Creek; nor did I know of their growing there, until Mr. Matlack mentioned them to me, as stated; and I cannot believe that Mr. Matlack would have asserted such an untruth without any object.

As for being brought there by the Indians, did you ever read or hear of an Indian troubling himself with transplanting flowering plants or roots, except perhaps they were esculents? When Mr. Bartram was amongst them, collecting plants and seeds, they considered it as a very childish employment. I should rather believe that the *seeds* might possibly have been brought there in the crops of wild geese or ducks, as it is in the direct course of their return from the South; and the distance from Cape Fear River, where they abound, is but about four hundred miles, in a direct line.

A gentleman once informed me that he had seen these plants growing in a place called Put-in Bay, south end of Lake Erie; but perhaps it was only the *Nymphæa odorata*.

The original letters of Collinson and others to Bartram were sent by me to Dr. Darlington, for his memoirs of Bartram and Marshall, and are now deposited with the "Pennsylvania Historical Society." But the greater part of the copies of Bartram's letters were destroyed before they came into my possession.

That the plants were not sent to Europe, for several years after they were flowering here, may be accounted for from a reluctance to part with the few roots received from the South, and from the great difficulty in getting up *perfect roots* from the deep mud and water. During the forty years that I owned the Bartram Garden (1810 to 1850), I very seldom sent the roots to Europe, although Loddiges, of London, and many others, required them in their orders almost every year. As for the *seeds*, it was but rarely that I could procure *ripe* ones, as the boys usually gathered them whilst quite green. They call them *pond chinquapins*.

[We are quite sure we had no intention of suggesting that Mr. Matlack, or any party connected with the Nelumbium history, uttered an untruth. But *mistakes* are made by the most truthful of men, even in stating matters of fact in which it seems impossible for them to be wrong; and such is evidently the case here.

Mr. Carr's correction of the mistake in the date does not help to unravel the mystery more than before; for the fact is apparent (see Darlington's "Memorials," page 181) that it was found growing near Philadelphia by Peter Kalm, before Bartram knew anything about it; and that he *had not* got it in his garden in 1760—ten years *after* the twenty years now deducted by our friend from his first date.

What Mr. Carr says of the Indians' estimate of plants is true only of the more modern Indians. Our continent was once the home of a more intelligent race, as the history of Indian antiquities abundantly shows. It was to these that we had reference. That this intelligent and ancient race of Indians did "transplant" things is more than probable from other instances. The Catalpa is a case in point. That this tree is not truly indigenous to the United States, but is a native of Japan, and was brought here from Asia by the original Indian settlers, Nuttall shows to be highly probable (see Nuttall's "Genera," page 10, author's edition). Recent investigations of a member of the "Philadelphia Academy of Natural Sciences"—not yet published, however—will probably show other plants, now supposed indigenous, to be in a similar position.

Turning again to the subject in question, it has been ascertained that the *Nelumbium* formerly existed in many places in the United States—invariably near famous Indian resorts—but has been unable to spread, and in many places to even maintain itself—in Ohio and Illinois particularly; and one of the most striking illustrations of which that we remember now is noted in Hooker's *London Journal of Botany* (vol. 1834, page 189), where it is stated that, in a tract of land on the Ohio River,

two hundred miles north of Lexington, the seeds of Nelumbium are dug up from the clay subsoil two feet below the surface, though it has not been found growing there within the memory of living man.

Our position is that there is a mistake about Mr. Bartram's introducing the Nelumbium to the Philadelphia ditches, and that it is probable the ancient aborigines, venerating the Lotus in their mother country, bestowed the same veneration on the species found in their new home, and transplanted it to any places of general rendezvous in which it could be made to grow.

Of course, we only offer it as a probability, for reasons stated. It is for the historian and man of science to follow up the clue.—Ed.]

SETTING MOLE TRAPS.

BY JAMES FORD, PRINCETON, IND.

The January number of the *Monthly* has arrived. I have read the description of the English mole-trap. The description of it is probably as near right as possible, if it can be understood. I have made many of those traps, and caught many cunning moles in them, both in this country and England. I write this to say there is one important matter belonging to it you have overlooked.

When the trap is set, and well stayed in place by two hooks, one at opposite corners, great care must be taken to exclude the light, or the mole will dig under it, if any space is left open so that the light appears. She works in the dark. Young mole-catchers are often much troubled and disappointed to find the trap full of earth, instead of the mole being caught. Cover it with some moss or grass-roots particularly, and also be careful to have the run clean and clear under the trap. Mind the covering does not prevent the spring from acting properly; and this trap, if well made, will catch the mole.

New or Rare Plants.

New Rose.—A red Rose, in every other respect like Souvenir de Malmaison, has been produced in Belgium.

The Best White Chrysanthemum ever raised, the *London Gardener's Chronicle* says, is Lady St. Clair. Flowers four inches in diameter, and three and a quarter deep, with incurved petals.

New Chrysanthemums.—The *Gardener's Chronicle* says the best at the recent shows were, General Slade, Striped Queen, Canissima, Bessie (Pompone), Sparkler, Julie Grisi, Ion, La Belle Blonde, Lord of the Isles, Dido, Dr. Brock, Her Majesty, Sienna, Turban, Belle Sauvage.

Rhodanthe Manglesii, *var. sanguinea.*—The old variety is well known, though it does not succeed well under cultivation, because, as we believe, it is too much petted with us. In the open air, it would, we think. do as well as the Acroclinium roseum.

It is a much deeper-colored variety than the old one, and, as figured in Hooker's botanical magazine, must be very beautiful. It is a native of Australia.

Begonia Kunthiana.—This is a dwarf species, with the under surface of the leaves of a beautiful crimson, and the upper rich green, and the most striking of all of this character. It is a native of Venezuela.

Verticordia Nitens.—A myrtaceous, yellow-flowered Australian plant. It is considered by Sir W. Hooker one of the most desirable of hard-wooded greenhouse plants. The leaves are narrow like an Erica, and the flowers in large umbel-like heads, as figured three inches across.

New American Seedling Dahlias.—Mr. Richardson, a well-known Dahlia-grower, has been successful in raising some fine varieties, amongst which the following-named kinds are considered the best: Emma Cheney, Mrs. Richardson, J. W. Degraw, Dr. Knight, Carrie Emmons, Jeannie Tomkins, Debbee de Gray, and Miss Mary Greene.

New Double White Azalea Indica—*Flag of Truce*—is the best double variety extant. It has obtained testimonials of merit for its large double flowers, purity of color, abundance of bloom, and neat, compact habit of growth.

New Tea Rose—*L'Enfant Trouve.*—The *Journ. of Horticulture and Cottage Gardener* of June 11, 1861, thus notices it:

"The blooms sent are very beautiful, and the Rose is unknown to us; the color a soft creamy yellow, very much that of the cream of rich milk; the shape good, and the foliage equal to that of Gloire de Dijon, and as the blooms sent are gathered from a plant in the open air, its hardiness would further enhance its value."

HISTORY OF THE VINE.

The Vine is one of the first fruits that appear to have been cultivated by man. The earliest allusion to it that has been discovered is contained in the Book of Genesis, chapter xl. verse 9, where Joseph relates his dream, saying, "In my dream, behold a Vine was before me." It is not only in the Scriptures, however, that we have evidence of the great estimation in which this fine fruit was held in the earliest ages of the world, for we have abundant proofs of the same still remaining on the monuments of several ancient nations, more especially of the Egyptians and Assyrians. To the patriarchs, the Vine was known by the name of *Gapen* or *Garen*, from which word we have very little doubt our word *Vine* has taken its rise; and in words of nearly similar sound we find the Vine tree expressed in many of the most ancient Eastern languages.* From nations speaking these dialects, through Greece and Rome, the people of the north and west have received it under the forms of *Vigna*, *Vigne*, *Weinbau*, *Wine*, *&c.* In like manner, our word Wine may be traced to the *Yien* of the Hebrews. We are aware that some writers have endeavored to assimilate the Latin *Vitis* with the *Gwyd* of the Celts; but to our minds it is more in accordance with reason and philology to derive it from the source we have here indicated—the language of a people who, if not the first, were among the earliest cultivators of the noble Vine.

Persia has been considered the native country of the Vine, as it is of the Peach, although we see little ground for restricting it to the comparatively limited area of that country; and it is almost a hopeless task to decide where, and to what era, we may refer the first cultivation of this plant. It must suffice to say that indications of its being held in great favor are to be found in most nations of antiquity, very closely approximating to the commencement of all historical records. Noah "planted a Vineyard and made wine" about 2348 years before the commencement of our era. The Egyptians, Assyrians, Persians, and Phœnicians appear to have cultivated it rather extensively, or, at all events, it was well known to them, and it is probable passed from Syria or Egypt into Greece and Italy.

To ascend to more modern times, we find the establishment of Vineyards in France dates from the commencement of the second century. Some authors have gone so far as to ascribe the introduction of the Vine into Britain to the Phœnicians, who traded to the southern coasts of the island for tin and other commodities many years before the landing of the Romans. Of its existence here, as a cultivated fruit, during the rule of the latter people in this country, we are tolerably well informed. Vopiscus tells us the Britons, by a decree of the Emperor Probus, dated about the year 280, were "permitted to cultivate the Vine," a fact that would seem to indicate former restrictions had been placed on its growth, from reason or prejudice of which we are unable now to determine the nature. Further, had the cultivation of the Vine been limited before the date of this decree, we can scarcely believe there would have been grounds for such restrictions being placed on its growth.

Later still, we learn from the venerable Bede that Vineyards were common in his time, about the year 730; and in manuscript calendars of the Saxon and Danish times, we meet with rude pictures of Vine-dressing. Again, in "Doomsday Book," compiled early in the eleventh century, the Isle of Ely was expressly denominated the "Isle of Vines" by the Norman conquerors. The Bishop of Ely, about the same time, appears to have received at least three or four tons of wine annually, as tithes from the Vines in his diocese, and, in leases granted by him, frequent reservations are made of a certain quantity of wine, by way of rent; and we find many of these wines were also considered but little inferior in quality to those of France at the same period. Few ancient monasteries were without a Vineyard attached to them. William of Malmesbury mentions the county of Gloucester as excelling every part of the country, in his time, in the number and richness of its Vineyards. In the reigns of Stephen and Henry III., we meet with accounts of Vineries. The first Earl of Salisbury planted a Vineyard in his park, adjoining Hatfield House, in Hertfordshire, which was in existence when Charles I. was conveyed there a prisoner to the army.

Grapes seem to have become scarce about the year 1560. Strype, in his Life of Grindall, Bishop of London, writes that his grapes at Fulham "were esteemed of that value, and a fruit Queen Elizabeth stood so well affected to, and so early ripe, that the Bishop used every year to send her Majesty a present of them."

From this period, Vine culture for wine-making appears to have gradually declined in Britain. This has been attributed to various causes, especially to a change in our climate that has slowly taken place, unfitting it for the growth of the vine.

* In these languages, it is a well-known fact that the P, V, and B are very convertible, the one into the other.

We think, however, with more probability, the introduction of superior wines from the Continent, which commenced about that date, gives a more satisfactory solution of the causes that have tended to the neglect of Vine-growing in England for the purpose of making wines.

Vineyards have been planted here in comparatively modern times, however, and several instances might be quoted. Evelyn, in his diary, under date May 8th, 1654, visits one "Mr. Tomb's garden; it has a Vineyard planted in strawberry borders, staked at ten feet distances." And again, 1655, September 26th, "I went to see Colonel Blunt's Vineyard, and drank of the wine; which was," the worthy old man tells us, "good for little."

In a work published near this period, entitled the "English Vineyard Vindicated," by John Rose, gardener to King Charles II., we have "An account of the several sorts of Vines, and what grapes do best accommodate with our climate of England," wherein Evelyn, who wrote a preface to it, says, "It will be of encouragement to us, when we shall consider how frequently they were heretofore planted in this country of ours, as they still continue to be in places of the very same latitude abroad, so as the strange decay of them amongst us, of these latter ages, must needs proceed from no other cause than that of our own neglect, and the common vicissitude of things."

Of later Vineyards than Evelyn's time, however, we may instance, as particularly worthy of notice, that the Duke of Norfolk, at Arundel, from which, in 1763, the noble proprietor had upwards of sixty pipes of excellent Burgundy; and another, at Painshill, in Surrey, formed by the Hon. Charles Hamilton, about 1730, which was in existence within the memory of persons still or recently living.

Attempts to hasten grapes appear to have been made early in the history of gardening in our country. Tusser enumerates "grapes for the table;" and other sources show us that a dish of grapes, grown most probably against a wall, was no great rarity at the tables of the higher classes, from the time of Elizabeth. The honor of originating a plan for forcing grapes, however, would seem to be justly due to the Duke of Rutland's gardener, who, in 1718, applied fire heat to inclined walls, "which were constantly burning from Lady-day to Michaelmas, whereby he is rewarded," says our informant, "with the largest grapes, and even the best Frontignacs, in July."

In the course of time, these inclined walls were covered with glass. Houses for the special growth of grapes, and thence termed Vineries, originated about the year 1750 only; and to Switzer, a nurseryman at Westminster, belongs the honor of giving the earliest plan for an erection of this kind, together with instructions founded on his experience of Vine-growing. Since the period of the first establishment of Vineries, the art of forcing has been constantly advancing to a state of greater perfection, and methods of treatment have been discovered that leave but little to be desired.

We may form a pretty correct idea of the number of varieties of Vines in cultivation in England, at different periods, from the following accounts: In 1560, Thomas Tusser enumerates only two varieties, "red and white grapes;" in 1627, Parkinson enumerated twenty-three kinds; Rose, in 1675, six sorts; in 1688, Ray puts down only twelve, being such as reckoned the best; in 1702, Rea mentions seventeen; in 1729, Batty Langley describes nineteen; in 1789, Speechly makes out a list of no less than seventy, with all of which he professes to be well acquainted; in 1806, Forsyth describes fifty-three, and enumerates a dozen more, making sixty-five in all; the "Horticultural Society's" Catalogue of 1826 contains a list of one hundred and fifty-nine varieties; in 1831, Mr. George Lindley enumerates sixty-two good sorts; Rogers, in 1834, gives a description of only twenty-eight varieties most approved of by him; Loudon, in 1835, enumerates forty-nine as well worthy of cultivation;* Mr. Robert Thompson, in 1842, describes and classifies ninety-nine. To the latter number we may add about twenty sorts that have been since made known or originated, and which comprise the total number of varieties in cultivation in this country at the present date.

Accounts of some Vines growing to extraordinary dimensions have been handed down to us, and some bearing bunches of almost incredible magnitude and number. This has been chiefly the case with ancient writers, though instances are not wanting nearer to our own times. Strabo, who lived in the reign of Augustus, testifies that the Vines of Italy, and especially at Margiana, were so big that their stems could scarcely be compassed by the arms of two men, and that they bore bunches of grapes measuring two cubits (one yard) in length. Seneca, on the testimony of Columella, is reported to have had a Vine that yielded him two thousand clusters in a year. Theophrastus mentions a vine that grew so large that a statue of Jupiter and the columns in Juno's temple were

* Mr. Loudon's list is a selection from Forsyth.

made of it. It is related that Rhemnius Palæmon, a celebrated Roman grammarian, took a Vineyard within ten miles of Rome, for which he paid six hundred thousand sesterces. By judicious cultivation, he so improved it that the produce of his Vines in one year sold for two-thirds of the purchase-money. According to Pliny, "many people ran to see the huge and mighty clusters of these grapes; and his success was attributed by his wondering neighbors to his deep learning." The same Pliny tells us that the Vine was ranked among trees "on account of its great size." Huetius informs us that Scio (the ancient Chios), one of the Greek islands, was long celebrated for its fruitful Vineyards, bunches weighing an almost incredible number of pounds. This has been immortalized by Virgil, who, celebrating the famous wines of Chios, says:—

"The ritual feast shall overflow with wine,
And Chios' richest harvest shall be thine."

In the Middle Ages, we are told, the doors of the cathedral at Ravenna were made of planks of the Vine tree, twelve feet long and fifteen inches wide. The Duke of Montmorency had a table of large dimensions constructed of the same wood. In more modern times, we may mention the following well authenticated instances of large and fruitful Vines:—

Mr. Eden, in 1758, planted a Vine, of the Black Hamburg sort, at Valentine House, in Essex, which was the parent of the one at Hampton Court. It extended itself to upwards of two hundred feet in length; and in the year 1819 it ripened near two thousand bunches. The Hampton Court Vine was planted in 1769, and had a stem thirteen inches in circumference, and a principal branch one hundred and fourteen feet in length. It has produced two thousand two hundred bunches, each averaging a pound, in a season.

In 1781, the Duke of Portland presented to his friend, the Marquis of Rockingham, a bunch of grapes grown in his Vinery at Welbeck, under the management of Mr. Speechly, which weighed nineteen pounds and a half. It was nearly twenty inches in its greatest diameter, four feet and a half in circumference, and twenty-two inches in length. It was conveyed to Wentworth House, a distance of twenty miles, by four laborers, who carried it suspended from a staff by turns, imitating in this the return of the spies from the promised land.

Speechly, who gives us the above account, describes also a Vine which was growing in the open air at Northallerton, in Yorkshire, in 1789, that had once covered a space of one hundred and thirty-seven square yards, and, had it been permitted, it is believed would have extended over twice or thrice the space. The circumference of the stem, a little above the ground, was three feet eleven inches. This Vine was then about a hundred and fifty years old.

The Vine attains a great age. Pliny mentions one in his time that was 600 years old; and Miller informs us that the Vineyards in some parts of Italy hold good for more than 300 years.

The south of France, Spain, and Portugal, Lombardy, and Naples are famous for their extensive cultivation for wine-making, the Vines being planted at regular distances, and trained horizontally over dwarf stakes. In Lombardy, the Vines may be seen for miles along the sides of the public roads, trained over tree-stocks formed like the letter Y. In Corfu, the currant-grape is most extensively grown.—*London Gardener's Weekly.*

Apples for Northern Illinois.—At a recent annual meeting of the "Illinois State Horticultural Society," as reported in the *Prairie Farmer*, Early Harvest, Carolina Red June, Duchess of Oldenburg, Keswick Codlin, and Sweet June—varieties before recommended for cultivation—were continued in favor, and the following added: Early Pennock, Red Astrachan, Summer Queen, and Summer Rose—the above as summer apples. As autumn kinds: Fameuse, Maiden's Blush, Fall Swaar, Bailey Sweet, Lowell, Fall Strawberry, Northern Sweet, Striped Gillyflower, American Summer Pearmain, Winter Apples, Winesap, Raule's Janet, Domine, Jonathan, Willow Twig, White Pippin, Yellow Bellefleur—for light soils only, Roman Stem, Red Romanite, Tallman's Sweet, Fulton, Northern Spy.

Lawton Blackberry.—At the last meeting of the "Illinois Horticultural Society," Mr. Charles Merritt, of Battle Creek, Michigan, stated that he gathered, the past season, from less than an acre of Lawton Blackberries (only their second season from planting), *sixty bushels* of fine fruit, which sold in Chicago for *five dollars per bushel.*

Mr. Merritt uses the plow and cultivator in the spring, mulching in later part of the season. In the fall, he lays the canes down, and covers with earth. We understand Mr. Merritt not to favor the application of manure.—*Field Notes.*

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☞ All Communications for the Editor should be addressed, "Thomas Meehan, Germantown, Philadelphia," and Business Letters directed to "W. G. P. Brincklor, Box 406 Philadelphia."

☞ Persons sending two new Subscribers for 1862 in addition to their own, with $3.00, can receive a copy of our First Volume, (1859) free. All persons who have paid their subscriptions for 1862, by sending two new Subscribers and $2.00, can receive a copy of the same.

GROWING FRUITS IN HANGING-BASKETS.

Nearly two years ago, we called the attention of the readers of the *Gardener's Monthly* to the fact that Mr. Chamberlaine, gardener to Hon. Abbott Lawrence, had succeeded in growing all kinds of fruits to great perfection in hanging-baskets. The idea was ridiculed in some quarters; and, beyond a promise from Mr. Chamberlaine to give our readers, at some future time, further particulars of his method of culture, we heard no more of the matter till quite recently, when attempts of Mr. Chamberlaine to procure a patent for his invention have attracted a more general and public attention to the case.

Mr. C. deserves the highest praise for the skill which has culminated in such superior results. We have no doubt but that it will open out a new channel of cultivation, in which the ladies particularly will interest themselves. When Mr. Meehan, some years ago, proposed in the *Horticulturist* the culture of plants in hanging-vases, illustrating the article with drawings of the effect produced by them. he never, with his experience of the slow progress other matters of taste had made, expected so general an adoption of it as the result shows. But the ladies took hold of it in earnest; and now we find vases of every pattern of beauty hanging from all windows with any pretension to taste and refinement.

And such we predict will be the case with Mr. Chamberlaine's idea—not, perhaps, to so great an extent, as more skill will be required—but the same mantle of fashion and taste will be thrown around it; and hanging-baskets of fruits will be as popular as circumstances and skill can make them.

We give herewith an engraving of a Pine-apple, which we have had made for our journal from a photograph sent us by Mr. Miller. Mr. Chamberlaine's agent, which will give some idea of how these plants look. Of course, a Pine-apple is the most unsuited to a position where gracefulness should be a prominent characteristic of beauty, and the effect with any other fruit would be better than with this.

Having said thus much in favor of the case, there is one point in connection on which we should like to have some further information. The process is said to be *patented*. If the patent be in the *basket*, we do not see that it will amount to much; as, for anything that we can see, one basket would be as good as another, so far as the principle of plant-growing is concerned. Plants are now growing by the ten thousand in moss-baskets all over the Union; and that they be made to bear fruit, as well as flowers, we take to be a matter of skill altogether. If the patent be in the *soil*, neither can we see its value. *That* we also take to be a matter of skill, which, in spite of all patents, any one will have a "natural" patent-right to try for himself. We speak of these things as a matter of principle, not expecting to interfere in any way with any profit Mr. Chamberlaine may justly hope to derive from the results of his excellent skill; for it will evidently be to the interest of all new beginners to employ a form of basket or a soil that has already proved successful.

COMPARATIVE PROFITS OF EXOTIC AND FOREIGN GRAPES.

A tempest has been brewing, for some time past, in the grape region. More recently, it has

headed into a hurricane, and it bids fair to sweep over us with great fury before long.

"Grape culture" has become so truly a "mania" that it has seemed almost a sacrilege to speak of anything in connection with the subject otherwise than in terms of the most absolute laudation, "Grapes" are considered the meat and drink of horticulture. To repeat by rote a great number of names of new grapes is to be a distinguished pomologist; and "a little more grape" is the most soul-inspiring watchword of gardening improvement.

We like enthusiasm. We would move more slowly without it. But it should be kept in due bounds. In grape culture, it has served us, and served us well. It has given us a great number of valuable fruits we would not like to be without. All honor to the grape enthusiast! But honoring him, let us not be blind to his vagaries.

In the Turkish Imperial household management, there is an officer whose duty it is to measure the ladies of the harem with a girdle of a certain size, any of whom found exceeding the proper dimensions are placed on slim diet, and other approved courses, until reduced to the legal proportions allowed them. They—the ladies—may be supposed not to approve of this limitation; nor will our grape enthusiasts. Yet we must say we think this girdling will be quite as much to their benefit whenever their circle reaches to a reasonable bound.

Persian pomology appears to have a very different standard of excellence from ours, if we may judge by the romantic stories of Persian travellers. The most celebrated apples are those of Isthakar, which on one side are so sour they cannot be eaten, and on the other as sweet as the honey of Canaan. Our enthusiasts are a good deal of this character, both the *pro*-enthusiasts and the *con*-enthusiasts. We do not admire this style, and propose to put the girdle on both—on that which sees every horticultural good in the "native grape," and on the one who sees no good at all.

Well, this grape storm is, as we have said, approaching us. The clashing elements are the native grape and the foreign grape. The former claims, by its chief advocate, that the vineyard affords a more remunerative pecuniary return than any other branch of culture. The latter asserts that the same sum of money, spent equally on natives in the vineyard, and foreign ones in the grapery, foots up largely in favor of the latter. This is the sweet and the sour of this new pomological specimen; and the controversy is, which is the sour side, and which is the sweet, for each antagonist respectively claims it. The bounds we would set to this question are good temper, good feeling, and a desire only for the truth. With these, a few facts and figures will settle the question.

Positive profits probably favor the exotic grape. It is not now as it was prior to the existence of the *Gardener's Monthly*. Before that time, a grape-house was a costly affair, and considerable mystery enveloped vinery management. Since our advocacy of fixed roof cheap houses, they have sprung up, as if by magic, all over the Union; and $100 now will do the work $300 did under the old sash regime. This has considerably cheapened production; and last year saw in Philadelphia what no former season saw—good exotic grapes selling at thirty cents per pound. This we believe was the lowest figure they did sell for—one dollar, and one dollar and a half being the premium figures earlier in the season.

Here the question arises, If exotic grapes can be raised at an average of say fifty cents per pound, is it worth while to raise natives at six cents? There are three classes who will answer this variously. Great numbers cannot raise native grapes at any price. Climate and accident go against them. But they can raise exotics at fifty cents per pound. Others do not like native grapes, and, having the means, will sooner pay No. 1 fifty cents, than buy the natives for six cents. The other class have not the means to build a grape-house, or conveniences for attending to them. They like native grapes, and can raise them for six cents, and sell them for that price to those who like them, and who have not the means to pay fifty cents for others. Each *consumer* will thus decide the case for himself. But another question arises, one for the *capitalist* to answer: Will three thousand dollars invested in exotic grapes produce me a more certain and larger profit than native grapes, in the vineyard? We may say, as a rule, we believe it will; viewed merely as a question of profit and loss between equal sums invested. If he cannot, we have studied the statistics of grape-growing to little purpose, and should be glad to have facts and figures as to the most that a vine-yard of native grapes has produced, and the circumstances connected with its culture and management.

Cheap as grape-houses have become, there are thousands to whom they are unattainable through want of means or favoring circumstances. To these, the introduction of improved native grapes has been a real blessing. There is no reason why

their culture should not be zealously encouraged by these classes, until the exotic has been reduced to a figure quite or nearly equaling the natives, or they improved in quality, certainly of crop, and adaptation to our varying soils and climate, as they are now rapidly doing.

The public at large will benefit by the discussion if, as we have said, the disputants confine themselves to a proper circle of investigation; for, should any facts be developed that will show that exotic grapes can be raised so as to bring the price down to anything like a fair comparison with the native prices, the greater certainty of the crop, and, to most tastes, the superior quality of the fruit would make the race for supremacy much more equal.

Scraps and Queries.

☞Communications for this department must reach the Editor on or before the 10th of the month.

☞The Editor cannot answer letters for this department privately.

Twelve Best Plants for Windows.—A correspondent asks! but it is as easy as answering which child we like best in our family. But we will name twelve very good ones, premising that they are wanted to stand "heat," and "dust," and "drought," and every kind of hard treatment.

1. Cineraria senecoides; 2. Plectranthus fruticosus; 3. Cereus speciosissimus; 4. Cereus flagelliformis; 5. Pelargonium of any variety; 6. Rose-leaved Geraniums of any variety; 7. China Roses—the old Pink Daily is the best; 8. Sedum Sieboldii; 9. Solanum capsicastrum; 10. Calla Ethiopica; 11. Polypodium vulgare—a fern that a dry room will not kill; 12. Fuchsias of any variety.

These are plants that a novice can grow, are very handsome, and have been selected with a view to as much diversity of habit and color as possible.

Prince on the Strawberry.—In the last *Horticulturist*, Mr. W. R. Prince has an article of twelve pages, the principal point of which is to show that strawberries of certain species, not only in America, but all over the world, have pistillates and hermaphrodites from seed. The English think they do not; or, if they do, their climate enables the pistillate fruit to swell without fertilization—good enough to eat, though not, of course, capable of reproducing perfect seed—just as the cucumber in hotbeds and other plants are known to do.

Mr. Prince talks of their "flounderings," their "ignoring of all science," their belief that "the germs of all intelligence first emerge from the fogs of Britain," and proves, as he thinks, that, if they *don't* see it, "it is because they *won't* see it." If argument is for the purpose of convincing an opponent, we are afraid this sarcastic style of Mr. Prince is unfavorable.

Another point is that Mr. Longworth does not deserve the credit of discovering the value of fertilizing pistillates. We have never understood him to claim it. Mr. Prince is right in asserting it to have been known long before Mr. Longworth's time; but the fact remains that Mr. Longworth popularized the idea, and induced its general adoption.

If there be any other material point in Mr. Prince's long article, like the English, "We don't see it."

Propagating Mulberries—*Mrs. F., Libertyville, Illinois.*—The Downing Mulberry is best propagated by whip-grafting on pieces of the roots of the Morus multicaulis, Morus alba, or Morus Morettii. They may be treated exactly as apple grafts. They ought to strike readily from eyes in a hotbed treated as grape eyes. Other species of Mulberry will; but we have had no actual experience with this variety in this way. Your other queries we will give next month, as our department is already over-crowded this.

Renewing Heat in Old Hotbeds—*H. W., Cohoes, N. Y.*—In our first volume, there is a great deal in reference to this subject, first discussed by Dr. W. M. Uhler. Any glutinous substance, dissolved in water, and poured over the beds, has been found effectual and very useful. Wherever tan-bark can be commanded, one-half of this, with one-half of coarse stable-manure, makes the most perfect hotbed, retaining a much steadier and more durable heat. The gelatinous matter used in renovating the heat acts better on it than on stable-manure alone.

Condense.—Inquiries are of little public interest—our only reason for answering them—when stated with the answers. Will friends make them as *brief* and to the *point* as possible. We have had to pass several this month, through being too long for our space.

Greenhouse Bulbs—*S. T. T., Roslyn, L. I.*, asks:—

"1st. I have been puzzled to guess what to expect of Stromanthus sanguinea, as I cannot find any account of it in any of my books. What is it? and how should it be treated? Is it an orchid?

2d. *Platycerium Alcicorne* I cant't find in Loudon or any of my books. What is it? where native? what is its proper cultivation?

3. What is the proper soil, temperature, and general treatment of Caladiums and Marantas?

4. For three years, I have carefully nursed a root of Brunswigia pumila, but as yet without any signs of an inclination to bloom. Should the bulb be *covered* with earth? Is it possible that it has had too much pot-room? What ought to be done to make it bloom? and what will it be when it does bloom?

I noticed a blossom upon a Stapelia that was divided into *eight* petals or points, instead of five, which is the usual number, and have often wondered whether such a freak had ever been observed before. The blossom was in every respect symmetrical and perfect, only one-third larger than the others of five points upon the same plant."

[1. There is no such plant as Stromanthus. It may be Strophanthus, a plant like an Oleander, and as easy to manage. Send us a leaf. Perhaps we can tell it by that.

2. This is a fern. It used to be called *Acrostichum alcicorne*, under which name you will perhaps find it in Loudon. It is best treated like an orchid, that is grown in coarse, turfy peat, in a basket, or on a block.

3. Any turfy or *boggy* soil suits them. Give them all the heat and as moist an atmosphere as you can command, and let the pots stand in saucers of water.

4. Brunswigias are usually difficult to flower, but well worth trying. We have never known any one to succeed well with them. If any have, we should be glad of their experience. In the mean time, give them plenty of water and *dry* heat when growing; keep them growing as long as you can. When they indicate a desire to rest, let them get nearly dry. When they push again, they will probably flower. The bulb should be only partially covered.

The Stapelia was a remarkable curiosity. Was it really a Stapelia?].—Ed.

Taylor' Bullitt Grape.—"*A Subscriber*," *Worcester, Mass.*, asks:—

"Will you please to give me your opinion of the Taylor's Bullitt Grape? I have read very contradictory accounts of it, some asserting that its quality is equal to the Rebecca. Others consider it a very indifferent grape. Which are nearest to the truth? Is it earlier or later than Concord? Will it probably be a profitable market variety?

"I know of only one small vine of it; but I noticed that it started earlier last spring than any other kind. Is it not from this cause more liable to injury from late frosts than most other sorts?

"I also wish to get some advice as to the best method of inarching young vines upon older ones. When and how should it be done?"

[You know the adage, "There is no disputing tastes." It is true here. Some think the Clinton the best flavored of all grapes. Others think very differently, and we belong to this class. Taylor's Bullitt we regard as a *white Clinton*, as near as comparison of a distinct variety will allow. We have not seen it in fruit by the side of Concord, but it should be later. It does start earlier than any other grape but those of the Clinton class.

Inarching should be done when the young wood is becoming ripe, say in August. A plant in a pot may be set against an old one, and the bark shaved from the scion and stock, so as the two faces be made to meet, and tied together with broad bast matting.

Grape Eyes.—*R. M. C., Lancaster, Pa.*, asks:—

"I have received some grape-cuttings (single eyes). As I have never propagated *single eyes*, I would like to know what is best to do with them in a hotbed. Would you advise putting them in the soil, or in a box of sand under the sash? or put sand *on* the soil, and no box, and plant in that?"

[Never use a wooden box for propagating purposes, if you can avoid it. Experience shows that the acid from the decaying wood is generally unfavorable, though tolerable success frequently attends the use. Earthenware pans are much better. If you have many eyes, and sure command of the heat in your hotbed, put them in the soil, on the surface of the hotbed. If you have but few, or your hotbed is such that it may get cold in spite of you, use pans. If you have to change your hotbed then, or any other thing "the matter" occurs, you can change the eyes to other places without risk. If you must use boxes, choose those that are well seasoned, rather old, but not in a state of rapid decay.]—Ed.

Time of Ripening of Isabella Grape.—"*A Subscriber*," *Fayetteville, N. Y.*, asks "the usual time of ripening of the Isabella grape in the latitude of Philadelphia, and also the time of ripening of the Maxatawney grape in the same location and exposure? where it is desired to substitute a better variety of grape for the Isabella, where the vine has been planted ten years, and now occupies thirty feet on a trellis trained on the renewal system, with the arms layered as fast as they grow, would you advise to graft, inarch, or dig it up and cart it away, and plant anew?

"Would you advise to plant the Cuyahoga or Delaware in its place for *amateur culture?* I am well acquainted with the Delaware, but not so well the Cuyahoga or Maxatawney, though I have them all in cultivation."

[The Isabella usually ripens near Philadelphia, about the second week in September—a few days earlier, according to locality and cultivation. Until the last season, no Maxatawney grapes have been produced, except from the original vine, neglected, uncultivated, and in a measure uneared for. These were scarcely ripe the third week in September, and hence its reputation as a late grape. Last season, cultivated plants from the original came into bearing in different places, and proved it much earlier than expected; and we now believe it will not prove much, if any later than Isabella.

Try to graft your vines. If they succeed, you will have very strong shoots, that will bear well the following season. You can cleft graft just beneath the surface of the ground. If they fail, as with best hands they sometimes will, plant other vines, which you can have prepared in pots in case of such accident.

For amateur culture, we would as soon do without the Seckel pear as the Delaware grape. From every locality that we have heard, Cuyahoga gives satisfaction; but we should like to see it fruit more extensively than it has yet had time to do in the east and other places before we unreservedly commend it. In quality, it is excellent.

Another "*Subscriber*" writes:—

"1. Will you please inform me whether the use of gas tar upon the ends of posts is in any way injurious to fruit trees, vines, or flowers. I have lately coated the ends of my grapery posts, and stakes, and posts for trees, and out-door vines with this tar, plastering it on thick with a mason's trowel. The usual way, I believe, is to put it on hot with a brush; but this gives more trouble than my way. A friend informs me that it will be the death of all my fruit trees—another, that it acts as a fertilizer. So, between the two, I am in a quandary, and have resolved to appeal to you, and abide by your decision.

"2. Is any danger to be apprehended from putting too much lime around peach trees in order to protect them from the borer? I have been much troubled with my trees this year, every one having been attacked, although last spring I bound tobacco stems around the collar, and put air-slacked lime besides. I now think I did not put enough of the latter.

"3. Which is the best and cheapest way to heat a small frame greenhouse, 15 by 12?

"4. This is not the first time I have had to seek information through the columns of the *Monthly*, and I am afraid, Mr. Editor, you will think me a 'troublesome customer.' But I hope you will pardon me, and that the answers to my queries may be as acceptable to others of your readers as they will be to me."

[1. Tar varies in strength. We have known some gas tar to injure trees; and at other times no deleterious effects have been apparent. But why use tar when charring is every way preferable?

2. Lime in excess impoverishes soil. Less injury will follow its use on peach soils than in others—as the fault of the peach tree in our climate is its excessive luxuriance, which renders it liable to injury from severe frost and other causes. Is is, moreover, of little service against the borer. Much better remedies have often appeared in our columns, as a reference to the Index will show. Fresh-oiled paper, tied around the collar early in spring, is probably the best protection.

3. A common parlor stove, inclosed in an outside cover of brick and mortar work, with a flue of glazed water-pipe, would answer. Care must be taken not to water the pipes whilst hot, or they will crack.

4. We have no objections to any number of queries when they are *concisely stated* and *well condensed*, without prelude or "peroration," and of a nature to interest others as well as the writer.]

Red Egg-Plant Seed—*E. D. H., Toronto, Canada.*—So many of the principal seedsmen will have it for sale this spring, that it would be unfair to name any particular one. It will, no doubt, be advertised in due time in our columns.

Tree Cotton.—*W. C.* asks:—

"Taking considerable interest in the Northern cotton question, I should be glad of the proper name of the plant which I notice you say in your last is *erroneously* called *Gossypium arboreum*. As I see some of the papers are pronouncing Mr. Kendall's course a humbug, I supposed, by your remarks, you also inclined to the opinion, and should like your views before experimenting, as I am inclined to do."

[We can give no positive information, and should be sorry, on a mere guess, to be classed with any who may "consider Mr. Kendall a humbug." Our only reason for supposing the name an error was from the fact that G. arboreum is not a native of Peru, but of the East Indies, and that the description given of his plant by Mr. Kendall is not that of *G. arboreum*.

If Mr. Kendall's plant is not the common cotton, which becomes a tree in congenial climes, and as a seedling a few inches high that we have seen, leads us to think it may be, it is *G. purpurascens*, or *G. Peruvianum*. But we would rather not guess at things, but wait for the facts. In the mean time, without excitement or a speculative spirit, why not give Mr. Kendall every courtesy, and his views all the attention the subject deserves? As to forming one of a company to introduce it here, that would be absurd. Wait a year till Mr. Kendall's experiments on his own farm have been reported. Mr. Kendall is himself too enthusiastic for a sound adviser on such matters. His recent public advice to form a company to "introduce camphor plants" is a case in point. If he would give any nurseryman the order, he could be supplied in one year with thousands, at a hundredth part of the cost of his "introduction scheme," from plants already in the country, of the existence of which he does not seem to be aware. Mr. Kendall perhaps has not got beyond the knowledge that is disseminated by the United States Patent-office department, and is not near enough up to the actual stage of progress here to be a safe adviser in these things; but this should not detract from the positive good he is endeavoring to do.]

Sorrel.—*W. H. W., Reading*, says:—

"Can you tell me any way of getting rid of sorrel, short of combing it out with a fine-tooth comb? I have tried lime and ashes, and the sorrel seems to think, by its invigorated growth, that I have been trying to *manure it*."

[We have often wondered how the idea originated of using lime to destroy sorrel. We have seen it covering acres of strong limestone land.

Good cultivation for a few years will soon eradicate it; nothing else will. If the roots can be buried but six inches under the soil in spring, about the time when vegetation pushes, or ought to push, no sorrel shoot will ever find the light; and, if that cannot be done, a few hoeings in spring, cutting off the green leaves, will so smother it, that, at the close of the season, so few will be left that a man with a fork will clear a large space of roots in a day. A couple of seasons of this practice will destroy this or any troublesome weed—Canada thistle not excepted.]

Botanical Orthography.—*A. M.* asks:—

"In naming plants, is it proper to add two 'i's' for forming the genitive, as done in most catalogues? For instance, is Douglassi, or Douglassii, right?"

[If the rules of scholastic Latin alone decided this question, the genitive would always be formed in a single *i* or *æ*, just as the noun might be masculine or feminine—Smith*i* for Mr. Smith, or Smith*æ* for Mrs. Smith. But botanical Latin has a purpose to serve, for which the more classical language affords no rule; so botany makes one for itself. If Mr. Douglass *discover* a plant, and it is named in his honor, it is Douglass*i*; if he be, besides the discoverer, the one who first *describes* it as a new species, botany distinguishes the honor by a double *i*—Douglass*ii*. If he neither discovered nor described it, but some friend complimented him by the name, it would be Douglass*iana*. So that you see there is no rule *per se*. You must know the reason for the name before you are sure of the proper spelling of it.]

We have received from *E. S.* the following:—

"I send you a specimen of a plant unknown to me. It grows much like the egg-plant, and bears the fruit abundantly. It is a solanum, I believe, Is it good for anything, or merely ornamental? I do not recollect exactly where the seed came from, but think it was in a collection of seeds brought from Europe, chiefly Italian. Please answer in the next *Monthly*."

[*Solanum Æthiopicum*, the Love-apple of the Jews of Constantinople. It is a native of Ethiopia and Turkey, and cultivated in China and Japan, though we do not see what for, as it is worthless, unless as a substitute for Cayenne pepper, and no handsomer than our own edible tomato. It has become quite common through the country the past year somehow.]

Van Buren's Golden Dwarf Peach—*J. M. F., Dallas City, Illinois.*—Mr. Van Buren informed us last spring he intended to send a stock north this fall. Of course, he cannot now. We have, however, heard of a friend who has a stock coming on—probably the only party north of Mason's and Dixon's line who has it—and it may be for sale next fall. We have not seen them, but the gentleman is thoroughly reliable whom we have heard has them.

Mahonia aquifolia—*J. F., Princeton, Ind.*—This thrives well only in shade, or where well protected from cold winds; but the soil should not be dry. To propagate, cut well established plants back to the ground in spring, and cover with about two inches of good soil. The young shoots will push up through this, and give you fifty plants well rooted by next spring. They can be also propagated by root-cuttings, as the blackberry; but, though more plants can be raised this way, they so raised are no larger in three years than the rooted suckers in one; so we prefer the first plan.

Gardeners' Situations.—Numbers of our friends write to us either for situations or parties to fill them. When we are able to do so, it gives us much pleasure to thus bring parties together. But most frequently we are unable to find the proper situations or the proper parties for them; and we hope that, when our friends do not hear from us in reply to their many letters, they will take it to mean that we have been unable to serve them as we could wish. We may add that *good* men for foremen in nurseries seem particularly scarce, and that the wages of such rule high.

Callicarpa purpurea.—We were annoyed to find that we had engraved this plant last month as "C. Cœrulea." It was properly described in the body of the work as *purpurea;* but we did not know that we had failed to make the correction on the drawing handed to the engraver till they had been all struck off. Subscribers will please correct their copies.

A friend informs us that it gets killed to the ground at Boston; but that it springs up again, bearing its beautiful berries in fall as we have described it.

Producing an Early Variety of Cotton—*L. S., York, Illinois.*—It is quite practicable to produce an early variety. The process is to watch the blossoming of the crop, and select the *first plant* that blossoms for a seed crop. Selecting from the following year in the same manner, an early habit of flowering becomes a fixed character.

Hygrometer—*J. M. F.*—McAllister & Bro., Philadelphia, has an instrument that seems to be all you want. Let us hear about your grapery.

Advertisements—"*F. X. Ward.*"—A correspondent writes that, wishing to examine the stock of F. X. Ward, who advertises in last month's *Monthly*, he was surprised to be unable to find any such person at Delaware. Is there something wrong here? Who is F. X. Ward?

Books, Catalogues, &c.

Proceedings of the Academy of Natural Sciences of Philadelphia, for November.

Amongst the usual scientific matters of interest, the following will interest arboriculturists. We agree with Mr. Buckley that it is not a distinct species.

NOTE ON THE BARTRAM OAK (Quercus Heterophylla).

BY S. B. BUCKLEY.

The Bartram Oak (Quercus heterophylla, *Mx.*) has long been regarded by most American botanists as a hybrid. Accompanied by Dr. Proctor, editor of the *Journal of Pharmacy*, I lately went to Mount Holly, near Burlington, in New Jersey, to see an Oak with leaves of varied forms, many of which correspond in shape with the figure of the Bartram Oak in Michaux's Sylva. It is less than one-fourth of a mile from the depot at Mount Holly, in a thicket near several willow oaks (Quercus phellos), of which it is plainly one. It has all the characteristics of body, limbs, and acorns, peculiar to the willow oak. Many of its leaves, also, have the ordinary form of Quercus phellos. Michaux, in his description of the Q. heterophylla, says that several young plants of the Bartram Oak have been placed in the public gardens to insure the preservation of the species. One of these, which was grown from an acorn of the original Bartram Oak, was planted in the Bartram Garden. Col. Carr, who succeeded Bartram in the ownership and possession of the garden, showed this tree to Mr. Meehan, of Germantown, who had charge of the garden during two years. With Mr. Meehan, a few days since, I visited this tree. It also is a

Quercus phellos. It has very few lobed leaves; indeed, there is scarcely one in fifty of them lobed.

In Mr. Durand's herbarium are specimens of Quercus phellos with lobed leaves like the Bartram Oak, which he received from Columbia County in this State, where such forms of the willow oak are said to be quite common along the banks of the Susquehanna. The Bartram Oak is not a hybrid, but a mere form of Quercus phellos, which, like most American oaks, varies greatly in the shape of its leaves.

Since writing the above, I have seen a specimen from the original Bartram Oak, which has both lobed and entire leaves, showing beyond question that it is a form of Q. phellos. This specimen is now in the general herbarium of the Academy of Natural Sciences at Philadelphia.

Buist's Almanac and Garden Manual, 1862, for gratuitous distribution.

As full of useful and interesting practical information as any of its predecessors, and sustaining fully what we said of it last year.

Geo. Dana & Son, Belpre, Ohio. Catalogue of Dahlias, with instructions for their management.

Joshua Pierce, Washington, D. C. Small fruits.

A. W. Corson, Plymouth Meeting, Pa. Small stock.

Daniel Conger, Walcott, N. Y. Condensed list.

S. Thompson, Suscol, California. General list, forty pages.

New and Rare Fruits.

Mead's Seedling Grape. (*See Frontispiece.*)—Last fall, in reply to a correspondent from Illinois, who sent us some specimens, we expressed the opinion that this was a better grape than the Catawba. This we said after comparing it with bunches of the Catawba growing near, and sent with *Mead's*. We were aware that this was high praise, as, when properly ripened in the West, where the Catawba is properly at home, *none* of the new kinds have heretofore excelled the Catawba, except according to the taste of a minority of good judges. Yet, in view of the great evil of multiplying new seedlings without decided merit, we have hesitated to say much of this new candidate, fearing its competitor sent us with it might not have been as healthy as might be, or from some other cause not up to its usual standard of superior excellence, though we could not detect it: but the following confirmation of our views by Mr. George Husmann, whose conservative views of new notions we have great confidence in, has decided us to give it this month as a frontispiece. Mr. Husmann says:—

"Evidently a seedling of Catawba, which it much resembles; bunch, medium to large, somewhat loose shouldered; berry, medium, about the size of Catawba, somewhat darker in color, round, red, with a fine blue bloom, juicy, and very sweet, not as astringent as Catawba. The vine, fine grower and healthy, not subject to the rot, and an enormous bearer."

Of its history, Mr. Pettingill informs us:

"This is an accidental seedling in the grounds of John Mead, Lowell, Mass., found in the summer of 1847, and fruited first time in 1849. In the fall of 1850, I took the vine to Bunker Hill, Ill., from which grew the sample sent you."

Hale's Early Peach.—At a recent meeting of the "Cincinnati Historical Society," Dr. Taylor, of Cleveland, spoke well of this Peach, and said they had some last season much earlier, larger, and finer than any other variety; they were ten days earlier than the Early Tillotson, and the earliest and best yet grown—fully equal to the Early York. The tree was fine, healthy, thrifty, and hardy. It stood the winter well.

New Everbearing Raspberry.—Mr. Robert Buchanan presented a communication from Mr. A. L. Moore, of Newark, Ohio, dated December 12, 1861, stating that Mr. H. L. Sprague had a new seedling everbearing Raspberry, which he thought would prove valuable. It commenced ripening June 20, 1861, and continued ripening till November 20th. Four separate beds, of twelve plants each, and of different ages, were taken, and the ripe fruit gathered for a period of four months. The following is a table of the results:

Picked.	6 y. old.	4 y. old.	2 y. old.	1 y. old.	Total.
July,	12¾	12½	6¼	5¾	37¼
August,	6	8	8½	10¼	32¾
Sept.,	12½	17	11¼	15¼	56
Oct.,	9	7½	2¾	9½	28¾
Total,	40¼	44¾	30¾	40¾	154¾

This extraordinary yield, nearly five bushels from forty-eight plants, is vouched for by the writer, who is known as formerly a highly respectable merchant of Cincinnati, of the old firm of Burr, Lodwick, & Co., and, if true, should entitle Mr. Sprague's seedling to a high place among raspberries.—*Proceedings* (Dec., 1861) *Cincinnati Horticultural Society.*

Domestic Intelligence.

Mr. Thomas Hogg, the celebrated florist, of Yorkville, has been appointed Marshal of the American Embassy to Japan. This appointment is highly judicious, as Mr. Hogg will be able to avail himself of whatever is new in Horticulture in that country, and introduce there what will be new and of use to the Japanese. Hon. Robert H. Pruyn, Minister to Japan, will sail from New York on the first of January.—*Albany Journal.*

Fire without Contact with Flame.—Two years ago, we stated that greenhouses were not safe where wood was in contact with the flue. It may not burn for a few years, but it will in time. This we gave as the result of our own experience. We are pleased to find our remarks confirmed by Fire Marshal Blackurne, of Philadelphia, whose rare attention to and fitness for his duties have caused his retention in office under all political changes of the municipal administration.

The following from a recent report is worthy of our readers' attention:—

"The hot air furnace is seldom altogether safe, even when the utmost scientific care and greatest mechanical skill are bestowed upon its construction, and its introduction into any building is always fraught with more or less danger. If the furnace itself is secure, and the flues are built of sufficient capacity for carrying off the smoke and heat, the latter are continually liable to become defective from the action of coal gases on the cement of their masonry. How wood is affected by the constant operation of caloric is now well known. The process of desiccation will go on for hours, days, weeks, months, and even years, and finally end in spontaneous combustion. It has been clearly established that, by long exposure to heat, timber is brought to such a condition that it will take fire without the application of a light or spark."

Rome Beauty Apple.—We have no tree that makes so thrifty, handsome, and upright growth as the Rome Beauty. It should, therefore, be branched low—clear to the ground even, headed back strongly every year; then manure, and thin out fruit-bearing twigs, and we will guarantee great satisfaction.

"There is no apple in this section, when rightly managed, so profitable as the Rome Beauty. Mr. Henry McKibbon, whose statements may be implicitly relied on, informed me that last winter he got $5 50 per barrel for them in New Orleans, when but $3 per barrel could be obtained for extra Roxbury or Putnam Russets."—*W. W. Rathbone, in Ohio Farmer.*

Apples for Northern Illinois.—We append a small catalogue of apples which experience has shown to be adapted to Northern Illinois:—

Yellow June, Sweet June, Carolina Red June, Early Pennock, Smith's Cider, Monarch, Prince's Winter Sweet, Pomme Grisse, Vandevere, Yellow Bellflower, Raule's Janet, Small Romanite, Tallman's Sweet, Winesap, White Winter Pearmain, and Willow Twig.—*Illinois Farmer.*

Dr. Torrey's Herbarium.—The fruit of forty years' assiduous labor, together with his valuable botanical library, has been presented to the trustees of Columbia College, who have provided accommodation for them, together with a residence in the College for Dr. Torrey. The herbarium is said to embrace examples of nearly all the collections of the Government expeditions, from that of 1819, under Major Long, to the present time; and also to include abundant illustrations of the Floras of Europe, Asia, South Africa, and Australia. Dr. Torrey does not intend abandoning his botanical pursuits, but hopes, under the auspices of the College, to prosecute them under more favorable circumstances.

Premium for Apples.—The late V. B. French left $500 to the "Massachusetts Horticultural Society," the interest to be devoted to advancing Horticulture. The Society will annually award it in two premiums of $20 and $10 each for the best twenty varieties of apples. A dollar an apple ought to encourage competition among the apple-growers.

Troth's Early Red Peach.—We have in back numbers called attention to the fact of an evident confusion as to what this peach really is. The same confusion seems to exist at the West. At a recent meeting of the "Cincinnati Horticultural Society," Mr. Bateham remarked that the cultivators in Warren County, Ohio, grew another peach under this name to the one he believed to be such.

Grape Culture about Cleveland, Mr. Batcham says, in "Field Notes," has progressed successfully the past season in this region, with amazing rapidity.

Foreign Grapes in the Open Air in Missouri.—Mr. Charles H. Haven has been eminently successful in this line. Atmospheric humidity, which our climate lacks, we have frequently pointed out is the *only reason* that makes grapehouses necessary. It will be seen from the following extract from a recent report that Mr. Haven gains thus by seeking *altitude* and *north side* positions. The committee say:—

"They witnessed with surprise and pleasure the successful growth of the choicest foreign grapes in the open air, without any aid from artificial heat or shelter, either from glass or any other means, up to this time. One kind was Burgundy, bearing handsome bunches of sweet and pulpless black grapes on strong vines. But the really valuable discovery made in this connection by the Secretary, and now manifest to them, was the feasibility of open air culture of the large white hothouse grape, known either as the true Hungarian Tokay or the Charlesworth Tokay, both of which kinds are specially noticed for their superior excellence among foreign grapes by Mr. Downing, in his work on fruits, and by a horticultural journal of high standing, the Philadelphia *Gardener's Monthly*, of January, 1861, page 30, to which you will please refer.

"This white grape, transparent almost as crystal, and of fine size, was hanging in large bunches on the vine, which had been exposed with the many thousand others of the Company, to all the vicissitudes of winter and summer, in a position *facing the north*, and upon lands elevated four hundred feet above St. Louis. This elevation Mr. Haven found, from observations made by him during eight years with the thermometer, modified the extremes of heat and cold from seven to ten degrees when contrasted with the temperature in the valleys of the adjacent rivers, Missouri and Meramec, or with with that of the city, thirty miles distant; and he attached great weight to this suject of altitude as having contributed much to the success of his experiments with foreign grapes in the open air.

Transplanting Large Trees.—In our first volume we gave a sketch of a simple contrivance—a pole and axle—for removing large trees. The pole is strapped to the tree, and then drawn down, and the horses draw from the root end. This is what is called "Stuart's plan." In practice, we have found this everything desirable for deciduous trees, but liable to injure the branches of evergreens. In Mr. Tucker's excellent "Rural Annual," noticed last month, we find the following way to apply the same machine to evergreens very satisfactory, and extract it for the benefit of such of our readers who may not as yet have procured the "Annual" itself.

"One of the simplest and easiest modes of removing the trees that we have met with is that practised by W. P. Howland, Esq. of Aurora, N. Y., who has carried evergreens twenty feet high or more, with half a ton of earth on the roots, with the labor of two men and a single horse. A large number of trees were thus removed; and so successful was the work that, supplied as they were with mellow and rich earth outside the balls, they actually grew more the following summer than they had for any single year previously.

Fig. 1.

"The trees are first dug about and completely loosened. A piece of carpet or thick sacking is then wound about the trunk for a foot or two to prevent any accidental chafing. An iron ring, shaped as in fig 3, and five or six inches long, is then fastened to the trunk close to the ground, by passing through it and around the trunk a broad strip of stout sacking—strong enough to hold the weight of the tree, fig. 4. The hinder wheels of a common farm wagon, with their axle, are then run up near the tree, behind it. Chains attached to the axle, as shown in fig. 1, enable the horse to draw it, when hitched to the whiffle-tree, *a*. The

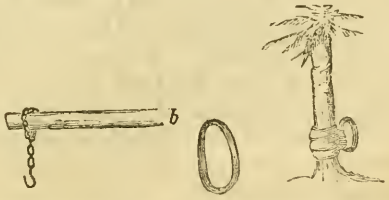


Fig. 2. Fig. 3. Fig. 4.

long lever, *b*, is then placed upon the axle, which serves as a fulcrum; and the hook at its end (shown

in fig. 2) is hooked into the ring already mentioned. By bringing down the end *b* of this lever (fig. 1), the tree is hoisted out of its hole, as shown in the figure. One man holding the lever *b*, and the other driving the horse, it is carried and deposited at the exact spot desired. It is lowered into the new hole with the same ease that it was raised from its former position."

Protecting Fruits from Rabbits.—Mr. Riehl says, in the *Valley Farmer* (only a stray number of which excellent journal, by-the-by, once in a while reaches us):—

"The best thing I know for the purpose are corn-stalks. Cut these about two feet in length; then split them in halves, and when you have enough, set them upright around the tree you wish to protect, putting the cut surface next the tree, and then tie with willows, or other suitable material. This is cheap, convenient, and durable, lasting from two to three years."

Low-Headed Trees.—At a recent meeting of the "Cincinnati Horticultural Society," Mr. Heaver and Dr. Taylor spoke in terms of high satisfaction of their success with Heart Cherry trees made to branch low. As standards, they do not usually succeed well in that part of Ohio.

The White Doyenne Pear is reported to crack as badly at Cincinnati as in the more Eastern States.

Foreign Intelligence.

Hotbeds without Manure.—The method which we here give is that of F. Bouceune, published in the *Revue Horticole*, and is highly recommended by him for its cheapness and efficacy.

It is, to use his own words, as follows:—

"Dig, first of all, a trench ten feet long, five feet wide, and twenty inches deep. This trench forms the bed for the materials. If, however, you wish to raise the bed above the level of the soil, you can, with some stakes and old boards, build a kind of box which will hold it. This done, we strive to collect together on the spot the necessary materials to construct the bed itself.

"Procure, 1st, three hundred to five hundred pounds of straw, or of old hay; or it may be of litter, or of well-dried moss. 2d. One and a half to one and three-quarters bushels of powdered quicklime. 3d. One pound four ounces muriatic acid, diluted in twenty gallons of water. 4th. One and a half pounds of saltpetre, dissolved in twenty-seven gallons of water. 5th. A new broom, or one nearly new.

"Spread over the bottom of the trench a layer of straw, or whatever the material may be, about eight inches or ten inches thick; sprinkle it with the quicklime; dip your broom into the vessel containing the muriatic acid diluted with water; then sprinkle this first layer, after which you shall make a second one of the same thickness. You shall scatter upon it the lime, and you shall sprinkle the diluted muriatic acid in the same manner as before.

"Make at last a third layer of straw, of less thickness than the first two—say four inches or six inches only, and wet it with the water in which you have dissolved the saltpetre; but shake up the bed often, and pour it upon it, so there may be absorption by the lime, which will evaporate a good part of the liquid in parting with its heat."

After this operation, the frame can be placed upon the bed, a few inches of earth spread inside, and as soon as the extreme heat has subsided, which will be in two or three days, it will be ready for use. Beds formed in this way will maintain their heat from four to six weeks.

The Margaret Strawberry (*Fraise Marguerite, Lebreton*).—The fruit of this is very large, from three-quarters of an ounce to one and a half ounces in weight, of the form of an elongated cone, shining red, coloring well even to the point. Seeds small, numerous, set almost on the surface. Flesh bright orange near the outside, white at the centre, solid, juicy, sugary, perfumed; core none or soft. Scapes vigorous, with hairs spreading horizontally. Leaves long; leaflets oblong-ovate, widely and regularly crenated, bright green above, ash gray beneath. Plants vigorous, hardy, and productive. This variety, which is early, and forces well, was raised from Sir Harry, fertilised with some sort unknown, at Chalons-sur-Marne, by M. Lebreton, and fruited for the first time in 1859. Compared with other sorts, according to the Comte de Lambertye, the Margaret Strawberry ripens at the same time as the Marquise de Latour-Maubourg (a variety better known in England under the name of Vicomtesse Hericart de Thury); and in point of quality the Margaret has all the excellent properties of the Princesse Royale (Pelvilain) without its fault, viz., that of having a hard core.—*Comte de Lambertye in Journ. de la Soc. Imp.* Abridged.

Seedling Pelargoniums.—At the late show of the "London Horticultural Society," Mr. Nye, gardener to E. Foster, Esq., sent some remarkably fine things, among which were Conflagration, crimson scarlet, with deep black spot on the upper petals, fine in quality and shape; Kettledrum and Mdlle. Patti, both highly promising rose-colored sorts, of different shades, with clear throat; also Lord Chancellor and Eldine, both excellent dark kinds. Leander and Butterfly, from Worton Cottage, were captivating kinds, also Regina formosa, Emma Sylph, Fidelea, and Maiden Fair. The last a promising white variety.

Fine French Phloxes.—A Paris correspondent of the *London Gardener's Chronicle* says:—

Phloxes are also largely grown here; the best appeared to be M. Comte Vigier, bright rose, crimson centre, Madame Aubin, bright rosy crimson; Docteur Lacroix, crimson purple, bright red centre; M. Forgeot, purplish lilac; Prince Troubetskoy, rosy lilac, crimson centre; Louis Lierval, rich rosy crimson; Apollon, brilliant dark purplish crimson; Alexandrine Bellet de Varennes, peach color, with red centre; Victor Hugo, purplish crimson, with dark centre; Madame Marceaux, shaded white, with purple centre; Madame de Brobéque, white, shaded and striped with lilac; Souvenir d'un Ami, rich purple; Madame de Wendel, white, with large purple centre; and Boule de Neige. The last is the finest white.

New Use for Rock Oil.—A foreign journal says that near Zwickan, in Saxony, an enterprising gardener has bored down to the bed, and now uses the gases which it sends up to heat his hothouse, conducting them in pipes under the floor. He has succeeded in raising tropical plants, palms, pine-apples, &c., to a considerable size; but the fruits are not fit to eat, though they look like their prototypes of the South.

Dr. Siebold, the Dutch botanist, returned to Japan in 1859, and has since been engaged in sending regularly to his nursery at Leyden, in Holland, the plants of that country.

Anigozanthus Manglesii, from Australia, has flowers of brilliant scarlet and light green, and appears as if cut out of cloth, was exhibited before the September meeting of the "London Horticultural Society," and is said to be a likely greenhouse plant to please the ladies.

The Moving Moss at Slamannan.—A correspondent, writing from Slamannan, says:—

"The entire mass of moss, some of the pieces of which will weigh a couple of cwts., is still moving, having now taken an easterly course in the direction of Limeridge, covering up a large portion of the branch railway, plants and all; also a free-stone quarry, that was being wrought, is entirely filled up, the depth of which will be about thirty feet, besides trees, hedges, and the crops that are lying on the low grounds. It has by this time covered over an area of a quarter of a mile, or more, and is at present leading its course through a burn, and no saying but it may come and inundate a number of dwelling-houses alongside of the same. This somewhat frightful phenomenon is one of the strangest sights that ever happened in this part of her Majesty's dominions, and consequently it attracts crowds of old and young people from far and near to witness it."

Temperature of the Earth.—It is well known that the temperature increases as we descend through the earth's crust, from a certain point near the surface, at which the temperature is constant. In various mines, borings, and Artesian wells, the temperature has been found to increase about one degree Fahr. for every sixty or sixty-five feet of descent. In some carefully conducted experiments during the sinking of Dukinfield (England) Deep Mine, one of the deepest pits in the country, it was found that a mean increase of about one degree in seventy-one feet occurred. If we take take the ratio thus indicated, and assume it to extend to much greater depths, we should reach, at two and a half miles from the surface, strata at the temperature of boiling water; and at a depth of about fifty or sixty miles, the temperature would be sufficient to melt, under the ordinary pressure of the atmosphere the hardest rocks.

To Make Fly-Paper.—We conceive that any bibulous paper steeped in weak sugar and water, poisoned by a strong infusion of fresh white Hellebore, would answer the purpose, if laid in a plate where it can be kept just moist. Of course, Veratria would answer the same purpose; or perhaps a strong infusion of Colchicum roots. But any vegetable infusion should be prepared with *cold* water.—*Gardener's Chronicle.*

Scilla Sibirica is becoming a very popular spring-flowering bulb in England. It blooms as early as the Snowdrop, and is of a brilliant blue color.

Mushroom Culture.—At this season of the year, when vegetables are scarce, anything in the way of variety is gladly welcome on the dinner-table; and as Mushrooms may be grown where the advantage of a cellar or outhouse is obtainable, with a temperature of from 48° to 55°, I would recommend those who possess that advantage to try their hand at their culture. I would simply remark to those who may not yet have attempted it, that they may be easily produced by obtaining as much short dung (fresh from the stables, if to be had; but this is not of vital importance) as will make a bed sixteen inches deep and any size required. Throw this into a heap for a few days to heat and dispel the greater part of the moisture it contains; then spread it out for a day or two to dry and cool down; after that, throw it up together again for a few days; generally about five or six will be found sufficient. It will now be fit to make the bed with, which, let the size be what it may, should be, as I have said, about sixteen inches deep. In making it, take care to tread or beat it firm. As soon as the heat shall have risen and declined to 75°, it is ready to spawn, for which I find Cutbush's (of Highgate) Milltrack the best; one and a half bushels will spawn a bed ten feet square. This, broken into pieces the size of small apples, will, placed just in the dung, and covered two inches with any garden soil, well beat down, produce Mushrooms of first-rate quality in six weeks in a temperature of 50°. A bed thus treated, twelve feet long by seven feet wide, spawned with one-half bushel of Milltrack, has produced me above eighty pounds' weight of Mushrooms, many weighing four ounces each, and is now in full bearing.—*W. Young, gardener to R. Barclay, Esq., West Hill House, Highgate, Dec.* 17.

[We have seen these mushrooms and the spawn itself, and can bear testimony to the excellence of both.—*Gardener's Chronicle.*]

Maple-Sugar in France.—The "Society of Acclimatization" are taking steps to introduce the sugar-maple extensively in France for sugar-making purposes. Experiments made there show a result of about one pound per tree.

Growing Bulbs in Holland.—The soil seems a deep sandy loam, or rather loamy sand, for two-thirds are sand, the other third being a black alluvial-like soil. Observed that for the more advanced bulbs they gave the ground a good layer of spit dung, and dug it about eighteen inches deep. A member of the firm of Peter Van Velson & Sons told me that he thought it ridiculous to pot Hyacinths in very rich soil the year they were to be bloomed in Britain; that the whole work was done the year before in forming the flower-bud, and laying up all the nutriment it required except water. We are not sure about this, but have given it a trial.—*Scottish Gardener.*

Spring Water.—Spring water is objectionable for two reasons and no others. It is too hard; that is to say, it contains too much lime, in which case it disagrees with Heaths, American plants, &c.; or it is too cold. The latter is its common fault; and a grievous one it is. If warmed by exposure to the sun, the latter fault is got rid of. Use rain-water when it can be had, and well-water when there is nothing better. Nitrate of soda is a good dressing. The brown will become green.—*Gardener's Chronicle.*

Lawns must be swept frequently, and mown once a week. Now, ladies can mow lawns themselves, for the brush lawn-mower is made small enough for a lady to guide or draw, and no scythe can equal the machine work, for the grass is cut as even as velvet; but it must be done regularly, and not be allowed to get ahead. The brush mower seems to do its work well in wet as well as dry weather. This was patented by a private gentleman, Mr. Boyd, who also patented a self-adjusting scythe, which has had an immense run, and is altered with the greatest ease, to suit tall or short persons, without the aid of the blacksmith.—*English paper.*

Hollyhocks.—At the London show, some fine spikes were shown by Messrs. Downie, Laird, and Laing, Mr. William Chater, and Mr. Bragg. The first sent Hon. Mrs. Cochrane, Beauty, Rosy Gem, John Low, Lady Dacres, Purple Prince, Flora McDonald, William Deans, W. Blackwood, David Flowlis, Golden Fleece, and Lord Loughborough. Mr. Chater had Hermione, Admiration, Joshua Clarke, Monarch, Excelsior, Mignonette, La Dame Blanche, Amaranthus Surpasse, Mrs. Chater, Jaune, Lady King, and Lady Braybrook. Of Seedlings, the best were Prince Imperial (Bircham) a very fine shining mulberry; Queen Victoria (Chater), rose; George Keith, crimson; and Stansted Rival (Downie, &c.) reddish salmon.

Succulent Plant Cuttings are best prepared by allowing the shoots to wither for a day or so before cutting into the required lengths—Horse-shoe Geraniums in particular.

Pavements for Orchard-Houses. — Pavements of brick, stone, or slate absorb much moisture, and give it out very slowly, so that in walking in your orchard-house in early spring or in autumn, such pavements feel cold and uncomfortable, and are probably dangerous to delicate constitutions. In my opinion, there is nothing equal to gravel. A path made with it, well sifted, and of a binding nature, is always dry and agreeable, and seems to give out a healthy atmosphere in which it is a pleasure to breathe.—*Gardener's Chronicle.*

Peaches for Orchard-Houses.—After noticing kinds that failed, the *Gardener's Chronicle* says:—

Sorts of peaches that have borne and are bearing a full crop: Abec, Early York, Early Savoy, Early Grosse Mignonne, Red Nutmeg, Grosse Mignonne, Crawford's Early, Violette Hative, Noblesse, Early Anne, Acton Scott, Cooledge's Favorite, and Royal Charlotte.

These are all early ripening sorts, and reasoning *a priori*, the fact supports your opinion that the shoots must be well ripened to produce fruit. The late peaches, as a rule, make their growth later than the early kinds, and did not last season ripen their shoots. My Nectarine trees, with the exception of the Roman and Early Newington, two Clingstone, and rather late sorts, are crowded with fruit.

A Sunk Garden for tender climbing plants has been made at Kew. It was once an old gravel-pit. The top of the pit (surface of the ground) is planted with evergreens, which give shelter. The sides of the pit are sloped, and the bottom is levelled off; and an iron pillar is placed for each climber; a chain is festooned from the top of each pillar, and the vines trained along these chains. The flowering shoots droop from these chains in every direction, and the effect is described as charming.

Venice Botanic Garden was founded in 1810, and now, 1860, it has 5000 species of plants under culture.

Padua Botanic Garden is the oldest in Italy, and one of the oldest in Europe.

New Dahlias of 1861.—The *Gardener's Chronicle* notices as amongst the best new ones, "Lord Derby," bright rosy purple; "Model," orange buff; "Mrs. Bush," deep peach-blossom. As varieties of useful character: "Delicata," rosy fawn; "Cygnet," deep flesh color; "Una," blush white, tipped with rosy purple; "Charlotte Dorling," white, heavily tipped with light purple; "Bob Ridley," maroon crimson; "Minie Dodds," shaded rosy lilac; "Handforth Hero," pale orange; "Goldfinder," yellow, tipped with red; "Black Prince," dark, heavily shaded; "Maria Carter," white, tipped with deep crimson; "Maid of Bath," white, purple tip; "Reliance," striped with blush; "Countess of Portsmouth," cream white tipped with rosy purple; "Paragon," golden yellow, edged with rosy scarlet; "Mary Ann," brilliant crimson."

Foreign Correspondence.

SCOTLAND IN THE YEAR 1861.

NO. II.

BY E.

A mile from Ladybank is Kingskettle, the parish town of the Howe of Fife, formerly belonging to the Crown; and when the kings were hunting or travelling this way, they always partook of some cooked refreshments, from which its name arose. It contains three large churches, of light sandstone, chisel-dressed, and each inclosed with a half acre of ground, laid out into walks, grass-plats, and flower-beds; and a belt of evergreen shrubbery lines the fences. These, with the tasteful arrangement and skillful culture of the dwelling-house gardens, make it a picture of horticultural industry. By the efforts of some leading men, and munificence of the wealthy of the parish, a horticultural society has been in existence for some years, and holds two exhibitions annually in the large parish schoolhouse; and small prizes are awarded when deserved. That has wrought such a reform upon the manners of the people, and given them a taste for fine gardening, that folks in other parts have followed their example; and now nearly all the parishes in Fife and Kinross-shires have their horticultural societies and annual exhibitions.

At the town of Falkland is Falkland Castle and Falkland House, both belonging to the same estate, though half a mile apart, now occupied by Mrs. Tyndle Bruce, but originally the home of the brave and loyal McDuff, Thane of Fife. The old Castle is a large, gloomy, stone structure, three stories high, with walls four feet thick. Its interior shows marks of its once having been kept in splendor.

The grounds are plainly laid out; but the large grass-plats are so finely enlivened with numerous flower-beds, all planted upon the *Ribbon system*, that give the place an air of elegance. These, with the good management of hothouse, greenhouses, vineries, and kitchen garden bespeak the care of a master-mind. The glass structures are all heated by hot-water pipes, which dip three feet at some parts without ever causing any obstruction in raising the temperature of the houses in all the fifteen years they have been used.

Falkland House is a large stone edifice, of light sandstone, polished; three stories high, with spires and towers rising above its roof. The ground for sixty yards all around it is an artificial table-land, quite flat, four and six feet above the surrounding lawn, and is supported on two sides by stone walls, and terraced upon the other sides. It is in grass. with gravel walks through it; and many flower-beds of ingenious forms are cut out upon the sod, and planted with every kind of plants that can give beauty to the scene, and pleasure to the owner, and kept in splendid order. The park is extensive, and beautifully ornamented with large groups of evergreen shrubbery; the lawn is kept in proper condition with the mowing-machine. The whole is surrounded with broad belts of tall trees, which of themselves indicate that a family of eminence and refined taste lives there. Seven journeymen and three women to weed are employed upon the two places. Water and gas are introduced into all the buildings, and for the use of the grounds. The ingenious work and skillful care of the whole reflect the highest credit upon Mr. George Fowler, the head gardener, and show that his abilities are far above the common grade.

At Kinross, there is a noble old estate kept in excellent order; but its name and that of its owner I have lost. It is, however, famous for having quartered a troop of two hundred horsemen who made an ineffectual attempt to release Queen Mary when she was imprisoned in Lochleven Castle, close by it. The Loch is fed by a swift-running brook that passes through the town of Kinross at its end. The castle is upon an island in its middle. The waters formerly were up to the walls of the Castle, courtyard, and garden—an acre and a half in all. But a large and deep drain has been made, and carried off so much of the water as to lower the level of the Loch ten feet, and given four hundred acres of arable land around it. The island is now seven acres in extent, planted with timber trees, and a flock of sheep eat up the grass. It is a place of great resort in summer. The Loch abounds with fine fish; and parties go there upon fishing and rowing frolics, as well as to see the antiquities of the Castle. Parties in Edinburg can get tickets by railway to the spot for three dollars the round trip; and at Ladybank's Station, fifteen minutes' time is allowed to change cars and take refreshments, both going and returning.

Horticultural Notices.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The Pennsylvania Horticultural Society held the first meeting in their new Horticultural Hall, southwest corner of Broad and Walnut Streets, on Tuesday evening, January 21. Notwithstanding the inclemency of the weather, a large and intelligent audience assembled to witness the display.

The largest and finest collection of plants exhibited was the contribution of Edward Hibbert, gardener to Fairman Rogers, Esq., consisting of a great variety of Marantas, Azaleas, Begonias, and other foliage plants, and the new Ixora Amboinensis, shown for the first time. To this collection was awarded a special premium of three dollars.

C. H. Miller, gardener to D. Rodney King, Esq., had some beautiful Caladiums, and the following new plants: Triolena scorpioides, Cissis Porphyrophylla, Oreopana Dactyfolium, and the new Peruvian Tree Cotton, or Gossypium acuminatum. This plant, which was pronounced by some but the common Cotton, was the object of much interest. If it prove hardy in our climate, it will be a formidable rival to the Herbaceous Cotton of the South. Specimens of the fibre were exhibited, and generally considered superior in silkness and fineness of staple to the Sea Island Cotton, samples of which were shown, as well as of the Louisiana and Liberia Cotton. A special premium of two dollars was awarded to these plants. Mr. R. Buist exhibited, for the first time, Euphorbia Poinsetta alba (Poinsetta pulcherrima alba?) and Stephanophysum Baikei, from Niger River. Dr. George B. Wood presented flowers and a leaf of the Astrapœa Wallichii. P. Mackenzie & Son had a very choice collection of cut Camellias, including Mackenzie's "Ellen" and the fine new seedling, "Mrs. Bliss." Mr. J. Ritchie made a most attractive show of hand bouquets, of the choicest flowers, chastely and tastefully arranged. To Mrs. Matthew New-

kirk, the premium was awarded for a dish of Pears. Mr. Thomas Meehan brought a plant of the Rubus rosæfolia, an old and favorite winter-blooming plant, which has not been exhibited for many years past. The first premium for table design was awarded to Robert Kilvington, and for a basket of cut flowers to Adam Graham, gardener to General Patterson.

The Library Committee were instructed to procure the leading English and American Horticultural periodicals for the use of the Society; also to let the hall for such objects as were not incompatible with the character and interests of the Society.

The Schedule of premiums was amended so as to allow plants to be presented in larger pots than provided therein. The alteration of the By-Laws, proposed at the last meeting, was carried. This allows the holding of weekly instead of monthly meetings, as heretofore.

Mr. J. Knox, from Pittsburg, the proprietor of the largest and most successful farm for the cultivation of small fruits in this country, and especially well known for his high and successful culture of the Strawberry, gave a very interesting and minutely detailed statement of his method of culture and its results. In brief, his process consists in very deep preparatory tillage of the soil, heavy mulching with straw, and a constant suppression of all the runners. The plants are grown separately, in rows, and no beds are formed, nor is any cultivation allowed between the rows. His average crop of the kinds grown for sale is three hundred bushels per acre. He supplies the New York, Philadelphia, Cincinnati, and Chicago markets. The statement of his method of cultivating hardy Grapes was also listened to with much interest; and the thanks of the Society were presented for his instructive and entertaining address.

The new Hall is admirably suited for the purposes of the Society, being centrally situated, well lighted, and of sufficient size for all the monthly meetings and displays, and it will prove an attractive place of resort for all who have an interest in Horticultural matters. The future of this veteran institution is certainly very encouraging.

BROOKLYN HORTICULTURAL SOCIETY.

First regular conversational and exhibition meeting of the year. Mr. Platt, of Brooklyn, exhibited a vase of skeleton leaves, which was much admired. From Mrs. Humphries, a basket of choice flowers; and from a Newark lady a collection of paintings of forest leaves. Mr. Miller, of 29 Broadway, exhibited a number of horticultural articles.

Mr. Knox, of Pittsburgh, was introduced, and solicited for his opinion of strawberry culture. He said strawberries were a great temptation to him, and he could have forgiven Eve if a strawberry had caused her fall In the main, his remarks tended to elucidate his mode of culture, so well known to the readers of the *Gardener's Monthly*. He recommended a variety, so as to embrace very early and very late kinds. Three hundred bushels to the acre he considers a fair average under his system.

Mr. Fuller remarked that the usual average of cultivators was about twenty-five bushels to the acre, and alluded to the fact that the labor on a poor crop was equal to that on a good one.

Mr. Kavanah gave some excellent remarks on the cultivation of room plants, for which he received the thanks of many present, who came to be instructed in just such matters as these, and who are thereby induced to go back to their horticultural pursuits with renewed interest and zeal in the good cause.

FRUIT-GROWERS' SOCIETY OF WESTERN NEW YORK.

We are pleased to learn that this annual meeting excited an increased attendance, and passed off with interest and satisfaction to all concerned.

The officers elected for the year were—

President—H. T. Brooks, of Wyoming.

Vice-Presidents—J. J. Thomas, of Cayuga; William B. Smith, of Onondaga; W. R. Coppock, of Erie.

Secretary—C. P. Bissell, of Rochester.

Treasurer—W. P. Townsend, of Lockport.

Executive Committee—P. Barry J. J. Thomas, C. L. Hoag, W. B. Smith, Joseph Frost.

In consideration of his indefatigable labors, the Secretary, C. P. Bissell, was unanimously elected a member for life.

On the question of the best apples for *summer* use, different members named Early Harvest, Red Astrachan, Sweet Bough, Summer Rose, Primate, and Jefferis. Golden Sweet was named as excellent for baking.

Autumn Sorts.—Munson Sweet, Calvert, Fall Jennetting, Jefferis, Rambo, St. Lawrence, Jersey Sweet, Pound Sweeting, Duchess of Oldenburg, Dyer's Pomme Royale, Porter, Maiden's Blush. Others named, but to which some members ob-

jected, were Hawley—which no one defended—St. Lawrence, and Jersey Sweet.

Winter Apples.—Fameuse, Rhode Island Greening, Roxbury Russet, Golden Russet, Spitzenburg, Pomme Grise, Peck's Pleasant, Swaar, Jonathan, Mother, Bailey Sweet.

Kinds named, but partially objected to: Tallman and Ladies' Sweet, Yellow Bellefleur—the latter adapted to more southern localities than western New York. Spitzenburg was thought to require high cultivation. E. Moody said Cyrus Beach, in Niagara County, had a tree of Spitzenburg that bore, in one season, twenty-five barrels of fruit.

The gentlemen who took part in the discussion were P. Barry, H. E. Hooker, G. Ellwanger, of Rochester; Dr. Beadle, of Canada West; W. B. Smith, of Syracuse; Dr. Sylvester, of Lyons; E. Moody, C. L. Hoag, H. N. Langworthy, B. Fish, Alvah Covey, and Mr. Sharp, of Lockport.

We condense the above from the New York weeklies—*Country Gentleman* and *Rural New Yorker*—and will complete it next month.

CINCINNATI HORTICULTURAL SOCIETY.

The following gentlemen were elected as principal officers for the ensuing year:—

President—Daniel B. Pierson.

Vice Presidents—Wm. Heaver, Wm. Orange, P. S. Bush.

Treasurer—Robert Clarke.

Recording Secretary—George L. Frankenstein.

Corresponding Secretary—E. P. Cranch.

Librarian—Wm. Addis.

At the meeting on the 10th, the new President, D. B. Pierson, was inaugurated, and made a spirited address, in which he stated it was the nineteenth anniversary of the Society's existence, and that the finances were in a flourishing condition. He recommended a spirit of emulation to horticulturists, in endeavoring to excel at their exhibitions, and the Society to offer heavy premiums for specialities, as Roses, Dahlias, &c. He recommended negotiations for the transfer of a lot in Spring Grove Cemetery for the use of the Society. In speaking of the general aims and usefulness of Horticultural societies, his views are so eloquently and tersely expressed, that we give them entire, and commend them to the attentive perusal of all who take an interest in the success of such institutions.

"The world's thinking is done by comparatively few minds; and the great mass of mankind follow unresisting, if not willingly, in the track of those who precede them. This city and its immediate surroundings have been beautified and adorned, to a large extent, under the persistent efforts and influences of the founders and members of this Society, covering the hill-tops with beautiful *homes*, and bringing Horticultural and Pomological luxuries within the reach of all. I commend to your earnest consideration the devising of plans for awakening a deeper and more wide-spread interest in all those higher developments of our favorite pursuit, which may tend to the surrounding of the HOMES of the PEOPLE, of every style and grade, with the beautiful in nature, guided and moulded by the hand of art. The influences of a pleasant home upon the development of mind is not sufficiently appreciated. The sense of the beautiful in nature exists in every heart, and may be expanded into a source of mental enjoyment, and made an important aid to the awakening of our higher, better, and more ennobling impulses. It is to men who appreciate views like these that this Society owes its origin, and to them, also, it is indebted for that generous support which has enabled it to give tone and character to Horticulture in the Ohio valley, for nearly twenty years, and to assemble here to-day, a united and harmonious organization, free from debt, self-sustaining in its finances arising from the annual dues of its members, possessing a good library, and with a surplus fund invested in bonds of the General Government."

ANNUAL MEETING AND ELECTION OF THE OFFICERS OF THE ILLINOIS STATE HORTICULTURAL SOCIETY FOR 1862.

The annual meeting of this Society occurred in Chicago, commencing December 3, and continuing four days. It was largely attended, and the discussions are reported to have been interesting, spirited, and profitable.

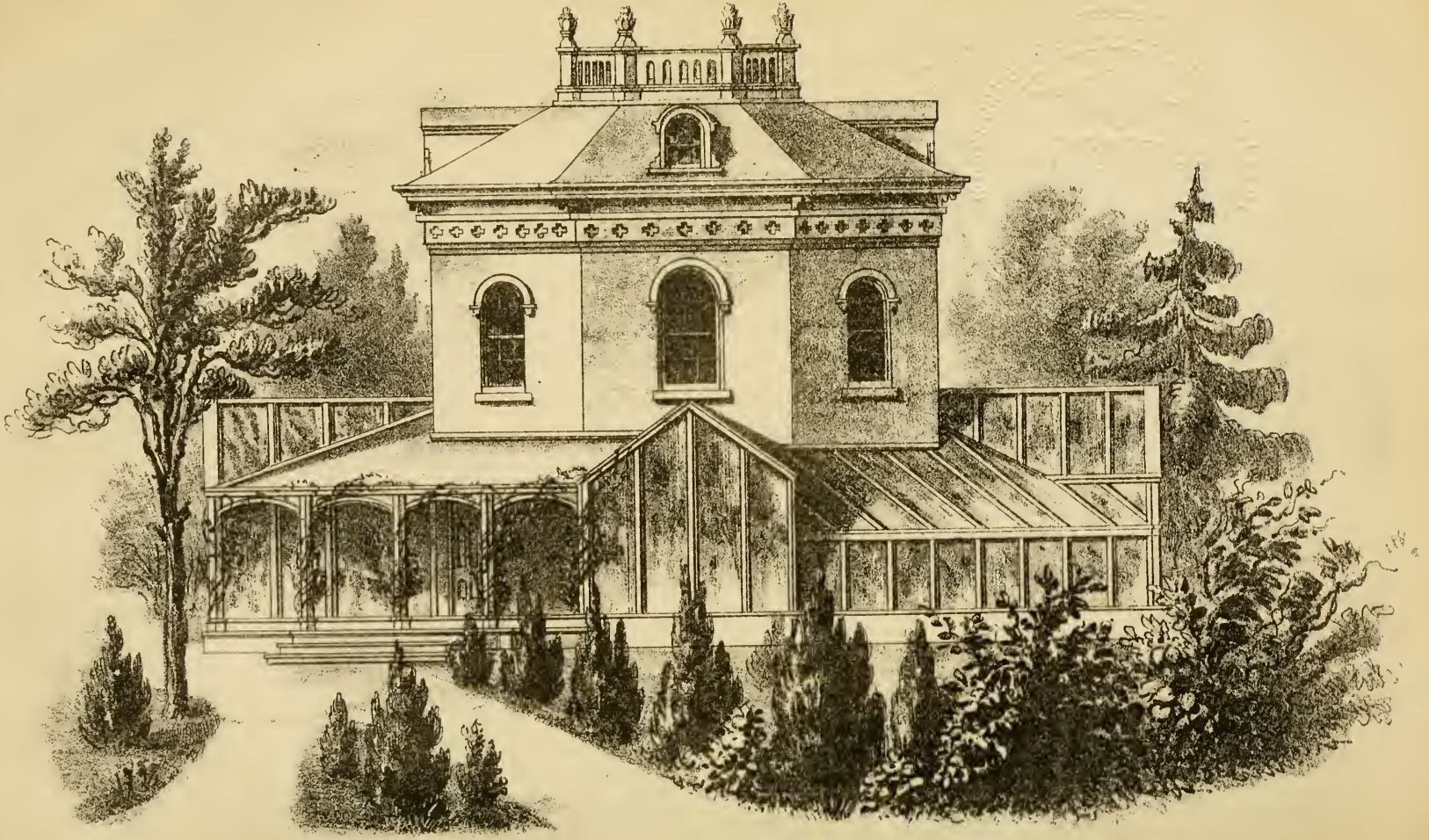
President—O. B. Galusha, of Lisbon, Kendall County.

Corresponding Secretary—C. T. Chase, of Chicago.

Recording Secretaries—W. C. Flagg, of Madison County, and J. T. Little, of Lee County.

Treasurer—S. G. Minkler, of Kendall County.

The Society will hold its next annual meeting and exhibition at Chicago, in September or October next, as may be determined by the Executive Committee.



DESIGN FOR A GARDENER'S DWELLING

THE
GARDENER'S MONTHLY.

DEVOTED TO

Horticulture, Arboriculture, Botany & Rural Affairs.

THOMAS MEEHAN, Editor.
W. G. P. BRINCKLOE, Publisher.

MARCH, 1862. VOL. IV.---NO. 3.

Hints for March.

FLOWER-GARDEN AND PLEASURE-GROUND.

The ancients had what they termed a "season of dancing." An old writer on therapeutics says:—

"If the Patient happens to lose the Season of Dancing, then he will be under very grievous Symptoms all that Year; such as a jaundice color in his Skin, sickness at heart, want of Appetite, a Slight Fever, and the rest of them which we have already mentioned over and over. Further, if he eats any Weather Mutton, Cucumbers or Citruls he is presently seiz'd with a grievous Pain in the Stomach. But then if he makes use every Year of the Season for Dancing, and by Sweating and the Sound of Music throw out the Seeds of the Poyson he holds very well all that Year, and is not liable to any of the forementioned Symptoms."

Now, we wish our horticultural "patients" to know that this is our "season for dancing;" and if they would not have "sickness at heart" for lack of a pretty garden all the summer, and a "grievous pain in the stomach" for *want* of fine cucumbers, citruls, and other nice things, they must be up at once, and keep step to the music of the shovel and the hoe.

Still, don't work ground till it is quite dry. Better delay a little than do so.

Where the frost has actually left, and little danger is apprehended of a severe return, planting may be at once proceeded with. In the Middle and Northern States, the winter will yet hold its own for awhile, and everything that can be done in advance of the busy season should be studiously executed. All pruning should especially be got out of the way, that may require doing. All ornamental shrubs and vines will require an annual going over—not with a pair of hedging-shears, as is often employed, but with a knife, and that with judgment. In pruning a climbing Rose, for instance, all the very strong and vigorous shoots of last year should be preserved, and all weak and decayed ones, as well as old shoots exhausted by abundant flowering, should be cut away. It should also be an object to get good strong shoots as low down towards the root as possible, as the finest flowers, coming from the strongest shoots, are thereby equally diffused over the whole plant. In pruning shrubs, a distinction should be made between those which flower from the young wood as it grows, and those which produce them on the wood of last year. The former—as, for instance, the Althœa—may have a very severe shortening of the shoots, as the new and vigorous growth will produce fine flowers; but in the latter case—say, for instance, a Lilac—if the last year's shoots are severely shortened, it is so many flowers destroyed, and such kinds should have only the weak wood thinned out. In all pruning, attention should be given to preserving a good shape to the bush or tree, as well as in attempting to get a vigorous and luxuriant growth.

Shrubs are not near enough employed in planting small places. By a judicious selection, a place may be had in a blooming state all the year; and they, besides, give it a greater interest by their variety, than is obtained by the too frequent error of filling it up with but two or three forest trees of gigantic growth. Plant thickly at first, to give the place a finished appearance, and thin out as they grow older. Masses of shrubs have a fine effect on a small place. The centre of such masses should be filled with evergreen shrubs, to prevent a too naked appearance in the winter season.

Ornamental hedges, judiciously introduced into a small place, add greatly to its interest. No easier method offers whereby to make two acres of gar-

den out of one in the surveyor's draught. The Arbor Vitæ, Chinese and American; Hemlock; Holly, Beech, Hornbeam, Pyrus japonica, Privet, and Buckthorn may be applied to this purpose.

Herbaceous plants do badly if several years in one place. Every second year, at this season, take up and divide them. Sow as soon as possible some hardy annuals. The earlier they are in the ground after the frost leaves it, the finer they bloom.

In laying out new places of small extent, be careful of aping "principles of landscape gardening" that are only applicable to places of large extent. Remember that everything we do should have a meaning, and that this meaning as often depends on the time and circumstances as on any real existence in the principles themselves. It will be a failure to attempt to make a two hundred feet square lot look like a "country place." It is better to make the gardening border a little on the artificial. In this, terraces, vases, and architectural objects will afford much assistance; and neatness, polish, and finish generally, be more pleasing than the sober negligence that should characterize a more quiet and extensive natural scene.

This is particularly the month to pay attention to the hardy annuals. The sooner they are sown, the finer they will flower; that is, provided they are really hardy. Tender annuals, such as Globe amaranthus, Balsams, &c., rot if they are sown before the weather becomes quite warm. The seedsmen's catalogues usually distinguish these classes for their customers. In sowing annuals, the soil should be slightly stirred with a broad-bladed knife or trowel; and after the seeds are sown, they should have a little soil sprinkled over them, about one-sixth of an inch deep, according to the size of the seeds; barely enough to cover is all that is required. Failures usually arise from the seeds being buried too deeply. Failures also frequently occur from the soil with which the seeds are covered being too stiff or clayey, "baking" after a rain. Light sandy earth or decayed vegetable loam from the woods should be employed for the purpose. Stick a peg in where the seeds are sown, so that when turning out the plants in May from pots, the annuals will not be disturbed. Also take care to preserve the names of the kinds. This is a great part of the interest in a flower-garden.

Of annuals that may be sown in March, there are some that are so very beautiful, and which do so well generally, that they *at least* should be grown. These are a *few* of them: Caccalia coccinea, Coreopsis Drummondii, Erysimum Peroffskianum, Escholtzia Californica, Malope grandiflora, Marvel of Peru, Nemophila insignis, Phlox Drummondii, Mignionette, Whitlavia grandiflora, Clarkia pulchella, Gaillardia picta, Palafoxia texana, Linum grandiflorum rubrum, Lobelia gracilis, White and purple candy-tuft, and Phacelia congesta. Where a hotbed can be commanded, many of the tender kinds can be forwarded under glass.

This is the proper season to lay down box-edgings. To make them properly, the soil along the line of the edge should be first dug, and then trod very hard and firm, so that the soil may sink evenly together, or the line will present ugly-looking undulations in time. Rooted plants should be employed; cuttings are sometimes used, but frequently die out in patches; a good edge can rarely be made from them. The plants should be set pretty low down, leaving the plants, when set, one or two inches above the soil, according to their stockiness. Sometimes box-edgings are laid around beds formed in grass. When so, a few inches of clear ground should be kept clean between the grass and the box, or the weeds will be so intermixed with the box, after awhile, as to render it a nuisance.

Walks should now have their spring-dressing—the verges cut, and a thin coating of new gravel laid on. Before putting on the new, harrow up the face of the old gravel with a strong iron-toothed rake. Roll well after the new is laid on.

Planting trees will require particular attention now; but do not be in a hurry the moment the frost is out of the ground. Cold winds are very hard on newly set out trees. Wait till they are gone. Always shorten in a little the shoots of all trees planted. They will grow the faster for it, and are more certain to live. Evergreens should be left to the last.

FRUIT GARDEN.

Where there is danger of choice fruit suffering injury from late frosts, protect by a few evergreen branches, or muslin. Some trees can be trained so as to be suited easily to different modes of protection.

Take borers out of fruit trees, and wrap oiled paper round the stem at the collar, to keep them out for the rest of the season.

Wash the bark of trees, where not done, to kill the eggs of insects, and soften the old skin so as to permit it to swell freely.

For small places, a plentiful supply of Strawberries, Raspberries, Blackberries, Gooseberries, and Currants should be provided, and the Grape-

vine by no means forgotten. These seldom fail to do well. Strawberries do well on a rich, dry, but deep soil. On banks that are not too poor or dry, they seldom fail to do well, and are often three weeks earlier than when on level soil. The Blackberry also will do on a dry, rich bank. We mention this as there are often such spots in small gardens which it is desirable to render useful. *Strawberries seldom do well in low, wet ground.* Raspberries and Gooseberries do better there.

In planting Raspberries, they should be cut down nearly to the ground when planted. You lose the crop, of course, but you get good strong canes for next year. If you leave the canes long enough to bear, it will probably be the only crop you will ever get from them. *Never expect anything to bear the year after transplanting.* It is generally at the expense of the future health of the tree.

Grapes that have become weak from age may be renewed by layering down a branch some feet just under the surface, and then cut back, so that one good eye only be left at the surface of the soil.

Any choice fruit may be grafted, at this season, on others less desirable. The scions should be cut before the buds begin to swell, and set in the ground as cuttings. But they should not be grafted till the stock is just about bursting into leaf. Those who have much of this work to do begin earlier—we speak principally to amateurs with but a few things to graft.

Pruning of most kinds of fruits has been accomplished through the winter. It is customary, however, to leave the peach till towards spring, in order to cut out any wood that may be injured through the winter. In other respects, the peach should have little pruning at this season, as it tends only to make it grow more luxuriously; and a too free vigor of growth is a fault of the peach in this climate. The only pruning admissible is that which has for its object the production of shoots in naked or desirable places.

The Strawberry, where it has been covered during the winter, should be uncovered as early as possible in spring, that the warm spring suns may exert all their influence on producing an early crop. As soon as growth commences, a sowing of guano has been found to be of great benefit to the crop of fruit.

In vineries where they have been forced early, the fruit will be setting, when it is usual not to syringe so freely about the flowers as before. Cold vineries will be about bursting their buds, and should have every encouragement to break regularly, which is most usually accomplished by bending the canes down as horizontally as possible. Most vineries are now built much flatter than formerly, and less anxiety is therefore felt in regard to this bursting trouble. Where vines are grown inside altogether, care must be used to guard against the soil becoming too dry. Usually about the time of stoning, a thorough soaking is given to the soil about them. Where vines grow in outside borders, the objection is that melting snows cool the roots too much, and make too great an extreme between the temperature of root and branch. The best English gardeners now place hot stable manure on their borders, and cover these with boards, so as to throw off the rain.

And it may be said of all fruit trees, they should be severely pruned at planting, and every other means resorted to in order to produce a vigorous healthy growth. Fruit, worthy of the name of fruit, is the result of healthy growth the season previous, and it is impossible to obtain both the same season of planting. If any fruit sets in a transplanted tree, it should be remorselessly torn off and cast away.

VEGETABLE GARDEN.

In the open air, Peas and Potatoes are about the first crops to be attended to. Of the former, the varieties have now become so numerous that even "new grapes" will soon have to give way in that respect. The difference, too, is so slight that we are in doubt whether yet to recommend to our readers any other as the earliest than the Prince Albert, so long cultivated, or the "Extra Earlies" of our own seedsmen.

Of early Potatoes, we think Fox's Seedling is the earliest, though in some localities the preference is given to the Early Walnut. Beets, the Early Six Week Turnip rooted, is perhaps the earliest. Carrot, the Early Horn; Cucumber, the Early White Spine, or Early Cluster; Lettuce, the Silesian, or Early Curled—to cut before heading; and the Early Butter left to head, are the first in season. Amongst the Radishes, the Old Short Top, and Red and White Turnip are still ahead; and in Spinach, the old Round-leaved. So that on the whole there has been but little advance made on early kinds of vegetables.

Asparagus roots are generally planted too thickly to produce fine shoots; they starve one another. A bed five feet wide should have three rows, and the plants set about eighteen inches apart. A deep soil is very important, as the succulent stems require every chance they can get for obtaining moist-

ure. About four inches beneath the soil is sufficient to plant them. Rhubarb also requires a deep, rich, and moist soil. The Linnæus and Victoria, of old and well-tried kinds, are considered very good for size and quality; the Prince Albert and Tobolsk for earliness; and the Prince of Wales and Blood Royal for color and flavor. Horseradish beds are best made by taking pieces of strong roots, about one inch long, and making a hole about a foot or fifteen inches deep, with a dibble, and dropping the piece to the bottom of the hole. A clean, straight root will then rise up through the soil. Crowns or eyes are better than pieces of roots, where they can be had, and a rich clayey soil better than a light sandy one.

About the middle of the month, Celery, late Cabbage, Brocoli, &c., is usually sown in this latitude.

All gardens should have beds of herbs. They are always looked for in the fall, and nearly always forgotten in spring. Now is the time to plant Thyme, Sage, Mint, Balm, and other perennial herbs; and Parsley and other seeds of hardy kinds may be sown. When we say *now*, it is, of course, understood to mean where the frost has evidently broken up for the season. Our readers in less-favored climes will not forget it when it does.

Communications.

DWARF PEARS.

BY "WILMINGTON," DELAWARE.

THE notice of Callicarpa purpurea in the last number of the *Gardener's Monthly* leads me to say that I have had it in cultivation for fifteen years, and supposed you had noticed it during some of your visits to my place.

My experience as to its hardiness differs from that of the gentlemen named in the article.

It is generally killed back a foot or eighteen inches; and in severe winters, or more properly in seasons when severe cold is suddenly succeeded by a hot sun, it is badly killed back. On the whole, it is not more hardy with me than Buddleya Lindleyana. On light, pourous subsoils, I have no doubt it would be more hardy.

When covered with its clusters of purple berries in the autumn, it is a beautiful shrub, but at other times is not conspicuous, which may account for your not having noticed it.

Whilst I have my pen, I will, with your leave, offer a few remarks on the pruning of Dwarf Pears, elicited by Mr. Bright's article on "Grapes and Pears."

It must be a gratification to all lovers of good fruit to know that the cultivation of the Dwarf Pear is becoming better understood, and consequently the success more certain. Much of the failure heretofore has been owing to the supposition that the pear, on its artificial root, was as competent to secure its sustenance as it would have been on its natural root. As, however, the quince roots, though more fibrous, are comparatively short, the nourishment must be artificially applied. And no one should plant a Dwarf Pear tree who is not prepared to devote a portion of his time to its culture. But to the question. The pruning of all fruit trees should be with a special object, and *according* to that object must be the time and manner. If the object, then, is thriftiness, the prnning should be done while the tree is in a *dormant* state; if fruitfulness is the aim, prune when the tree is in full leaf. Pruning for fruitfulness is best done by *pinching* at intervals through the summer, beginning when the new shoots have made six inches of growth, and repeated as soon as the next buds have made that length. Pruning for the purpose of thinning out a thick head should always be done about midsummer, so that the wounds may be quickly covered with new wood and bark. In pruning for vigor, I have found autumn pruning best, as a preventive of frozen-sap blight. Many cultivators condemn fall pruning, because the terminal bud is liable to be killed by the winter. In reply to that objection, I would say I obviate that by a double pruning. In the fall, trim one bud higher than you desire, removing that bud in the spring. We are told that frozen-sap blight is caused by the freezing of the sap in the young and immature wood. If, therefore, the young wood is removed before severe freezing weather, the *tree* cannot be affected. Acting on this hypothesis, I have practised fall pruning for a number of years, and have not in that time lost a tree by blight.

Then as to the mode of pruning, that must depend on the mode of growth. The top buds always grow the first and the strongest, and must therefore be shortened the most. If the tree be of straggling, irregular growth, prune to an *inside* bud; and if the tree be an upright grower, prune to an outside bud—always leaving the upper bud on each branch to be winter-killed. In the spring, the upper bud should be removed without fail, lest perchance the winter may not have killed it. In this way, I think the three objects may be attained,

viz., vigor, fruitfulness, and shape, and the last, too, without detriment to the others.

The above remarks apply as well to Standard as to Dwarf Pears; and as a little evidence of the correctness of the theory, I will mention that I have Sheldon and Belle Lucratif on their own roots seven years from the bud which have borne for two years, and a Dix double worked on quince ten years old, which has been in bearing four years.

[Our correspondent says, in his private note: "Excuse my first attempt. The practice is probably known to all; but I think I have not seen it in print. The desire to interest my fellow-readers of the *Gardener's Monthly* induced the effort."

Our correspondent we have long known as one of the most successful cultivators of the Dwarf Pear; and years ago, when the feeling against Dwarf Pears ran very high, it was one of our strongest arguments to observe that, if he could grow them so well, why not others? The detail of his experience will lose nothing by so long a consideration of his "first attempt." Now that the ice is broken, and he feels (we hope) the waters of publicity are not so cold as he expected, we expect the pleasure of seeing him often in the *Monthly*.—Ed.]

CANNING FRUIT AND VEGETABLES.

BY NOVICE.

Next to knowing how to *grow* our fruit and vegetables, it is interesting and important to know how to *keep* the more perishable sorts in such manner as not to impair their fresh, natural flavor.

After experimenting, for some years past, on all the various methods recommended as "best," with only partial and variable success, I chanced to meet with a method, described in the "Fruit Preserver's Manual," a Rochester publication, which is the best I have yet tried, inasmuch as it insures the perfect preservation of the fruit or vegetable without in any wise changing its original flavor. If any quantity of sugar, however small, be added to fruit in canning, it becomes, to that extent, a *preserve* or *sweetmeat*, and the true, fresh taste is in so far impaired. If spices, vinegar, or other condiments be used in canning vegetables, they are converted into pickles, catsups, and the like.

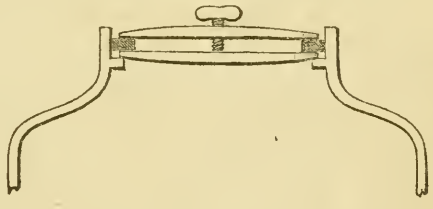
In order to insure the retention of the fresh, natural taste, the method described (with some modifications which I have found requisite) is as follows:—

In a common wash-boiler, lay a rack of lath or fine wire-work, raised four inches above the bottom, and pour in water to the depth of three inches. Fill the cans with fruit, without adding either water or sugar, and place them on the rack with their stoppers out. Lay a cloth over the boiler, and press the cover down tightly upon it. Then, with a brisk fire, heat the can and its contents *thoroughly through*. This can best be ascertained by testing the fruit, if firm-fleshed, with a fork. The time required varies from twenty minutes to an hour, or more, depending on the size of the can and the kind of fruit. As most fruits and vegetables shrink very much during the process, one or two extra cans or jars should be used, from which to fill up the defective ones before sealing. Usually the cans shrink about one-third, requiring four cans to be filled to obtain three when finished. With peaches, and all juicy fruits, it is advisable to prepare, by mashing and straining, one jar of *juice* to every five or six of the fruit, from which to fill up the remainder as they shrink away.

As soon as thoroughly heated through, and *not before*, remove from the fire, and seal up rapidly.

I have used almost every variety of can, jar, and bottle extant, and have found none to compare with a glass jar, of Willoughby's patent, of which I append a sketch, showing a section of the neck and stopper.

A flange is blown in the neck of the jar to receive the stopper, which consists of a ring of vulcanized



rubber, compressed between two metallic disks. When the stopper is inserted, a turn or two of the screw causes an *outward* pressure of the rubber ring, which thus adapts itself to the inequalities of the neck, and hermetically seals the jar. A backward turn of the screw relieves the pressure, and releases the stopper.

I send you a sample of peaches put up after the above method. The original quality of the fruit was inferior, being purchased late in the season after all the good fruit had disappeared from market. Such as it is, you will find the flavor unimpaired.

I am told that the same mode has been practised by British housewives for time out of mind. The stopper, too, though lately patented, was invented by a friend nearly ten years since, and applied as a

bung to large metallic barrels used by the writer for nine years past. Truly there is nothing new under the sun, not even a "NOVICE."

[The specimens were equal to fresh fruit.—ED.]

OUR "F. F. F.'s," OR FIRST FRUIT FAMILIES.

BY F. K. PHŒNIX, BLOOMINGTON, ILL.

A TRULY interesting and important subject, upon which, so far as we know, but little has been written. Nor is it strange, for Horticulture as an acknowledged institution is but of yesterday. "Blood" to the breeder of choice animals is almost everything—why not in fruits also? Once as thoroughly understood, why not the laws of breeding be as grandly and profitably applied to fruits as they have been to our domestic animals? Grateful for the possessions and attainments in horticulture characterizing the present age, the writer confesses to a most decided aversion to contentment with them. They are indeed beggarly compared to the future that lifts its verge and curtain upon us. Would we could inspire most profoundly the same feeling in the breast of every cultivator, at the same time giving it a more practical turn than it has yet taken in our case. The range, the material is boundless, the demand great for the "good time," the better things, "coming." Where are our voyagers of discovery, our horticultural Columbuses—nay, even our Knight and Van Mons of the present day? Is not horticulture in this respect far behind? Why it should be does not appear so readily. If petals can be controlled *ad libitum*, why not germ and pulp? Or, if more difficult, would not the achievement be the more worthy?

Living as the writer has for almost twenty-five years in the great fertile (shall we say fruitless?) West, with its peculiar climate,—now tropic, now Arctic, we could but feel a most special, urgent, painful demand for a more perfect development and adaptation of varieties to our exigencies. We confidently believe—leaving it for time to prove or disprove—that there is not on the habitable globe so perfect a fruit-soil and climate as ours of the West, once its peculiarities are understood and mastered; and nowhere is fruit more needed or like to be better appreciated.

But apart from any "shriek of locality" would we plead this cause, and on the broadest principles. There is room—we had almost said equal room—and need for improvement in fruits for all locations and uses. When we consider the worn-out soils, and it may be varieties of older districts—the spreading, smoky, dusty desert areas of our cities—the new demand for dwarfing, walls, and orchard-houses, and above all the immense popular appreciation for fine fruit as one of the prime necessities and choicest luxuries for the table, forming, as it does, the sole known remedy for confectionery, tobacco, and dye stuffs, in supplying our American jaw-mills, and ruining our American stomachs—who shall say our subject is not worthy to rank among the "F. F.'s," not of the past, but the coming "F. F.'s"? Yes, even now, amid these stirring times (warlike, it is said), when the greatest of confederacies (the W. S.) and the greatest of monarchs ("Cotton"), with hordes of lesser magnitudes, are on trial for dear life!

Feeling our exceeding inability to cope with the subject, we beg thus to sketch at it, and proceed to touch upon the *Apple*, as best known, and hitherto popularly considered the most important of fruits, though its supremacy is unquestionably threatened by the Grape and the Pear. We say, too (wildly, no doubt), the thrice-blessed Peach—fair, luscious queen of our "F. F.'s," to whom we swear allegiance, despite of rebellions, yellows, and all other discomforts!

The range and capacity of the apple may be inferred from its growing and bearing fruit over at least thirty degrees of latitude—from the 30th to the 60th of the northern hemisphere. Of its original types, three—the American, Siberian, and European crabs—are known in this country, and another of Oregon is mentioned by Downing. All are decidedly ornamental, and bear profusely, fruit more or less useful. Hardy, robust, they form innumerable varieties, and the European and Siberian blend more or less readily with the cultivated or dessert varieties. Whether our own American crab does or not is disputed, though generally denied by writers; and no hybrids are known that we are aware of, unless a large variety called Soulard crab, introduced from near St. Louis by Mr. J. G. Soulard, an amateur of Galena, Illinois, and quite extensively grown by him near the latter point, shall be so classed. This is claimed to be a hybrid, and certainly approaches it more nearly than any native we ever saw; and yet we were skeptical as to its being other than a full-blooded though highly improved native. The American crab for hardihood, vigor, fruitfulness, late-blooming, and the keeping qualities of the fruit cannot be exceeded, and is only equalled by the Siberian in fruitfulness, and exceeded by that species in ornamental and dessert or cooking qualifications. Our native, so far as we know, never suffers from

the cold even as far north in Wisconsin and Minnesota as 46°, where we are told it grows and bears well, though the mercury almost every winter goes to 25° and even 35° below zero. The cultivated apple in these severe climates suffers in both bark and wood of the trunk more than in the branches; so that, perpetually sprouting, it fails to acquire bearing tops. Hence the need there of an iron-sided stock to bear up budded tops of choice fruit until they get bearing wood, and perfectly hardy choice varieties can be introduced. Mr. Soulard has tried this crab several years, and somewhat as a stock, and thinks favorably of it. The writer saw grafted tops of two years growth in fine health upon them; but how long and thoroughly it was tested we did not learn, but we doubt sufficiently to consider it established. Yet it is worthy of thorough trial. As a stock, for cider and for domestic use, with the addition of sugar, but especially as a stock, and to hybridize with dessert apples, if that be possible, we must think it promising. It is the largest, most productive and ameliorated sort we have ever found, keeping equal to any, and apparently every bit as hardy, though discovered near St. Louis. It is to be hoped that many seedlings will be raised from it and fruited. The Siberian is a dear pet thing, wonderful in its diversity and endurance; yet it has one bad trick for the West; blooming so early, it is sometimes caught by the late frosts—really our *greatest* drawback on fruit culture. Trees of most of the varieties are hardier than any of the dessert sorts, and consequently are in great demand for the Northwest. The old standard small red Siberian crab proper as we obtained it, of which also the Cherry crab is a type, has not always seemed as healthy as some of the slower-growing, larger-leaved, and fruited sorts. I do not know as others have ever found it so; and indeed with us it has been ordinarily quite healthy, but have noticed, one or two seasons, something akin to the leaf-blight on the Plum, that worked mischief, and then seemed to disappear again. Seedlings of the Siberian crab are most readily grown, and with innumerable and often desirable variations in habit and fruit. We have seen some entirely sweet, others very large and splendidly colored, all red or all yellow, and pleasant for the dessert, and then the little currant crab, and the beautiful double-flowering sorts, which latter are said to be from China, and are apparently more tender, and of quite different habit. The Siberian we have seen flourishing, grafted on the limbs or trunk of the native. The Siberian stock will also take the dessert apple graft or bud, but unwillingly, and, unless closely watched, robbers destroy the infant shoots. How permanent the union would be, we cannot say; but the Siberian stock for severe climates is well worthy of trial. The Siberian crab in its different colors, dwarfed, is exceedingly ornamental.

Of the European crab we have seen little; the trees are quite hard-wooded and thorny, and the fruit we imagine harsh, or bitter-sour, or sweet. Prized as a stock, its great merit is, nevertheless, as the parent of our blessed Pippins, Pearmains, and other "F. F.'s."

And now we come to what inspired this, we fear tedious article—our dear family connections among apples. Without any recognized fruit hand-book or heraldry, we must spell our way through as we can, trusting to older and better observers for correction.

The Summer Pearmain has one most obvious child or congener, the Gabriel, or Ladies' Blush, of Indiana. The fruit of the latter is very similar, but a month later, and the tree more slender, spreading, and dark-wooded than the Summer Pearmain—on the whole, a poorer nursery tree with us. The old favorite Sweet Bough—is not the Autumn Sweet Bough akin?—and fancifully, no doubt, we have grouped the Primate and Hawley as possibly related. The Baldwin and Tompkins Co. King must be very close blood relations, if our verdict be taken. As to the delicious Yellow Bellflower, it has produced innumerable seedlings—several of which we have seen—perhaps a score or two, and yet nothing that we believe has been generally accepted. But really it is all wrong that some operation can't be performed on his obstinate system to correct a bad habit of orchard loafing; though in the enjoyment of most splendid health, and putting on the most promising airs in the spring, he often takes a nap, and is—barren! Why not try on him the Janet stock, or some such promising cross? The variety is indispensable, and we can certainly some way correct the unfruitfulness. The Early Harvest, it is said, has fixed sub-varieties or variations from the normal type, as we have often heard and read, but don't yet meet with them. The Fall Pippin and Rhode Island Greening we think closely allied, but know no others of the family unless various sub-varieties, and very likely fixed ones, as we have always thought the White Spanish Reinette and Winter Pippin of Geneva were, so far as our limited opportunities indicated. Very possibly they are seedlings, or even as sub-varieties doubtless worthy of names and cultivation; but the similarity in trees, so far

as we have noticed—*a most unerring indication*—and their habit of sporting, convince us of their possible or probable original identity. The Sour and Sweet Rhode Island Greening is well known, and a "clincher" to the fact of fruits sporting and thus running into sub-varieties, which, nevertheless, where so abnormal (as also in the case of the striped-fruited pears), always indicate debility, if not disease. The Newtown Pippin and Newark Pippin, are they not related? Of the latter, the writer knows but little, and yet always noticed a similarity in tree and fruit. As to the green and yellow Newtown Pippins, it doubtless proves great obtuseness; but we must have more convincing proofs of their distinctness. Be it our moral obliquity, we are only honest in begging for more light. It is a perpetual "Little Joker" to us—"now you see it, and now you don't!" There is one other well-known and popular variety we must also have up in this connection while on the confessional—the Herefordshire Pearmain. Now, the fruit invariably so pronounced by our best living American pomologists, as we have often heard at the fairs and halls, we know from over twenty years acquaintance, grows on an upright, thrifty tree, with gray, purplish, or brown shoots, and moderate sized leaves, while the Herefordshire Pearmain trees and scions, often got, for comparison, from one of the highest eastern sources, is comparatively a miserable, sprawling, feeble thing, that with us scarce will make a tree at all. Then from others we have heard stories of a Winter Pearmain vastly like the Summer, only later, &c., &c. So that we can only call that old familiar Pearmain ("Winter P.," as we first got it, and grown so in Mr. Roe's nursery, near Rochester, twenty-five years ago), "Red Pearmain," and wait further denouements.

The Fameuse and St. Lawrence are well-known parent and child, both worthy. The Pryor's Red, best of Western or Southern apples, has one seedling, the "Lewis" grown, by Mr. Ragan, of Indiana—the tree similar, but more vigorous, and the fruit not equal to the parent so far as we know. The Red Astrachan; Russian and how strongly marked and hardy this, the Duchess of Oldenburg and Tetofsky. Would we had more Russian varieties on trial. Of this, the Duchess is the most hardy. Rawles Janet, all things considered, is the most valuable apple over a large portion of the West, and the next best strictly Southern or Western sort. Indeed, fairly grown, it is surpassed in quality by but few of any section. Many years since, H. W. Beecher, at Indianapolis, Indiana, in his *Farmer and Gardener*, gave it the preference over the Newtown Pippin, its competitor, for first honors with him after Pryor's Red. That opinion we endorse from repeated opportunities. As a frequent over-bearer and late ripener, it is more variable than the Newtown Pippin, and too far north, perhaps never gets its full richness. But that wonderful and valuable peculiarity it has of late blooming!—reproduced, too, in a seedling of it, the Ragan apple, also grown by Mr. Ragan, of Indiana—copied, also, but not equalled in the *Northern Spy*—from which peculiarity we may expect the happiest results, "some of these days," in overcoming the great evil besetment of Western horticulture—late frosts!

And now for the Esopus Spitzenburg—happiest parent of the lot, as we are wont to consider it—and yet don't know as that or the Red Canada is senior. But only think of those two, the Jonathan and the Northern Spy! what a quartette! and the old Spitzenburg probably least valuable of all for the prairies; that is with the new light dawning from our Northern Spy trees, which yet must speed, or it will never reach many planters alive! Some will object to this classification, but we are thoroughly persuaded; although there are points of difference, but only two or three as we recollect, and very many of similarity. There are two other families, inferior, but older and more widely known than this, at least among certain classes of cultivators—the Pennock and the Vandevere (of Pa. and Coxe). We doubt if there are two other American apples so universally grown and recognized as the Pennock or Big Romanite; and yet now it is deservedly rejected. But not so with his children or congeners—the Gilpin or Carthouse (Little Romanite of the West), Early Pennock, and more recently a new, and for the market, rather promising member, the Minkler, introduced to notice by S. G. Minkler, a well-known nurseryman and pomologist of Kendall County, Illinois. It is, however, by others claimed to be identical with a sort known as Brandywine, of Pennsylvania. We have known several other undoubted seedlings of the Pennock and Carthouse, but not of note. Yet it shows the strength of this strain of apple-blood. Would it were only richer! Of the old Vandevere, which somehow lost both name and place in A. J. Downing's works, it must be said not many mourn its loss; and yet it has filled a very large place from the Atlantic quite across into Missouri and Iowa, and has a very fixed constitution, having reproduced itself in the Vandevere Pippin and Smokehouse, with other undoubted seedlings, and other variations we have noticed,

none of which are esteemed first class, unless for cooking.

The Swaar should get itself into a more agreeable nursery tree; and why can't it—as full as it is, if we rightly remember, of fine seeds? We have grown seedlings from it, and, after noticing a decided similarity in growth and habit, we removed, without saving (to our shame we confess it) any portion of them, and several other very striking fac-similes in tree to the original trees, whence the fruit came that contained the seeds, &c. It was a mixed lot, and we had three or four years' growth on them. Among others, we recollect well seedlings almost the picture of the Bailey Sweet, Blue Pearmain, and Flushing Spitzenburg trees. Looking back, this much is certain now—we "would try and not do so any more!" The trees themselves, so far as we know, fell victims to the bark-louse.

Winesap, another very great Western favorite—nearly a rival, and in places much preferred to the Janet, and yet we don't see any kindred to it, unless it may be the New York Pippin, or Ben Davis of Kentucky. The tree of this latter resembles the Winesap quite a good deal; but it is altogether more regular and beautiful, while the flavor of the Winesap is as much the better. The Carolina June is another favorite Western or Southern variety, strongly fixed in character, often nearly reproducing itself from the seed. We have known several very obviously allied, but none of greater, if equal value. Then there is the Hoss apple, and others common at the South, that are of the same self-reproducing habit. The two Detroit apples (of Downing's revised), Red and Black, are quite similar in tree and fruit, save that the Red keeps longer, and has longer, more wavy shoots. The Murphy, as we have seen it, is of better flavor than the Blue Pearmain, of which it is said to be a seedling. We have heard of seedling Westfield Seeknofurthers "exactly like the original," and the same of Milans; but the Spitzenburg has seemed the best strain for dessert fruit, and beyond all question the Janet is the sort for us of the West to work into for breeding purposes on account of its unrivalled habit of late blooming. The Winesap bloom is also quite hardy against frost, decidedly more so than most. Could we get up from present subjects in hand, a complete variety that should be nearest perfection for the West, how would we go to work?

As we have asked, so let us try to answer—yet with diffidence. To the vigor, hardihood, productiveness, and for some uses the keeping qualities of the Soulard crab—but no! we must adhere to the cultivated sorts. Then, to the hardihood of the Duchess of Oldenburg, add the beauty and vigor of the New York Pippin, Domine, Sweet Pear or Sweet June trees, the early and great productiveness of the Hawthornden, or Keswick Codlin, the late bloom of the Janet, and the hardihood of the Winesap Bloom, or a little more of it; then give us the flavor of the Bullock's Pippin, or Pryor's Red, the juiciness of a good Janet, the size and beauty of a well-grown Esopus Spitzenburg, Jonathan, or Yellow Bellflower, and it sufficeth *us*. After all, had we the fruit and tree of this latter on the Janet order for bearing and keeping, there would be but little room for improvement on present models. Who will get up these composite varieties?

We close with the remark—that two radically different fruits never grow on the same wood—sports of course excepted—and no two different trees ever bore the same fruit; so that a close student, taking reasonable time to compare growth and fruit, need never remain mis-led.

PEACH BORERS.

BY R. M'CAFFERTY, LANCASTER, PA.

I HAVE read a great deal in the *Monthly* about destroying the Peach-borer, but I know of a better plan than any that I have read of, which is to apply burning-fluid with a sponge around the roots; or, if there are holes already bored deep, apply with a small syringe. Burning-fluid is spirits of turpentine and alcohol. Perhaps the spirits of turpentine *alone* might do; but I don't know, as I have not tried it.

GROWTH OF THE DELAWARE GRAPE.

BY A. OSBORNE, MARION, OHIO.

As a great deal has been said and written about the Delaware Grape-vine being a slow grower, I wish to give the readers of the *Monthly* a statement of the growth of a vine the past year.

In the spring of 1860, M. Jacoby procured a Delaware vine, one year old, from the cutting, and planted it at the northeast corner of his dwelling-house. Formerly, there had been a cistern there, which had been filled with rich surface soil from woods, containing a good portion of well-decayed leaves. The soil where the vine is planted is a rich sandy loam, overlaying a gravel subsoil, giving perfect drainage. The vine threw up two canes, the year planted, of well-matured wood, of seven or

eight feet in length. These canes were pruned back to two feet in the spring of 1861, and permitted to throw out two canes each. It was making a fine growth in July when I first saw it; and when the fall growth was over, the canes respectively measured 17, 14, 16, and 15 feet of well-ripened wood; in all, 62 feet. It threw out numerous laterals, or side branches, of from two to eight feet each in length.

This I call a good growth, and shows that the Delaware Grape is not as tardy a grower as some claim. I think, from what little experience I have had with my own vines, that the surface soil of woodlands, containing a fair proportion of well-rotted leaves, is one of the best soils for grapes. I also find it excellent for pears. If you think this worthy of a place in your valuable *Monthly*, you may publish it.

[When it is said the Delaware is a *slow-grower*, it is spoken *comparatively*. Strong as the growth mentioned by our correspondent is, under the same circumstances others would have been stronger. That the Delaware is *comparatively* a slower grower than some others, we think unquestionable.—Ed.]

EARLY SPRING FLOWERING TREES.

BY JOHN SAUL, WASHINGTON CITY, D. C.

Among the most beautiful of our early spring flowering trees are the varieties of double-flowering peach. The variety with rose-colored flowers has been long cultivated in gardens, where it is an universal favorite. Mr. R. Fortune, on his first visit to China, added to this the beautiful bright crimson and white varieties; and in a subsequent visit he sent home the carnation and camellia-flowered. When covered with their beautiful double flowers in spring, nothing can be more lovely. They should be found in every garden, however limited.

The new double white almond is another lovely shrub. No plant is more profuse in blooming; and loaded with its myriads of double snowy white flowers, it is indeed superb. In company with this, I may introduce another of Mr. Fortune's introductions—Prunus triloba, a very beautiful shrub, but at present scarce. There is also a large double-flowering almond, old, but good; and the large flowering almond (Amygdalus macrocarpa), with large showy single flowers—very desirable.

Double, Chinese, and French cherries are also valuable early flowering trees, that have been long known in gardens, yet not so generally cultivated as they should be. Like the foregoing, they are free bloomers and beautiful.

Who does not admire the apple blossom? Always lovely, beautiful, fragrant! The double varieties are well worthy of admittance into the smallest and most select gardens, where they will not fail, in company with the other lovely trees I have been describing, to please the most fastidious.

VEGETABLE PEARLS.

A correspondent says:—

"It may not be known to many readers of the *Monthly* that pearls are also found in the vegetable kingdom. Three kinds of fruit have been found, though in extremely rare instances, to contain pearls. They are *Ficus Benjamina*, *Datura alba*, and the Cocoanut. The natives of Macassar, when they find such a cocoanut pearl, cherish it highly, wear it in the form of an amulet, and ascribe wonderful powers to it.

Two hundred years ago, the German botanist, Rumph, presented the Grand Duke of Tuscany with a ring of cocoanut pearls, so he says in his "Herbarium," without, however, mentioning the ducal return, if ever any were made.

"These pearls are sometimes round, sometimes conical, sometimes spheroidal."

[We have often seen these hard pearly processes in acorns, but not in any other fruit that we remember.—Ed.]

Forests on the North Sides of Hills.—Dr. Stevens, in his last lecture on the geological history of North America, described, as will be seen in the report in our last issue, the great submergence of the continent after it had received nearly its present form. During this submergence, a cold ocean current swept over the land which was buried beneath the waters, from the north to the south, wearing away the rocks, and carrying their *debris* upon their southern sides. Dr. Stevens stated that our most fertile soils are found in this drift.

At the close of the lecture, Professor Mason, the President of the Association, remarked that several years since he happened to have a conversation with a man who had spent his life in buying and selling land, and the man told him that he very soon learned not to take up land from the north side of a hill. Professor Mason said that his attention being thus called to the matter, he had made very extensive observations and inquiries which had fully confirmed the opinion of the speculator.—*Scientific American.*

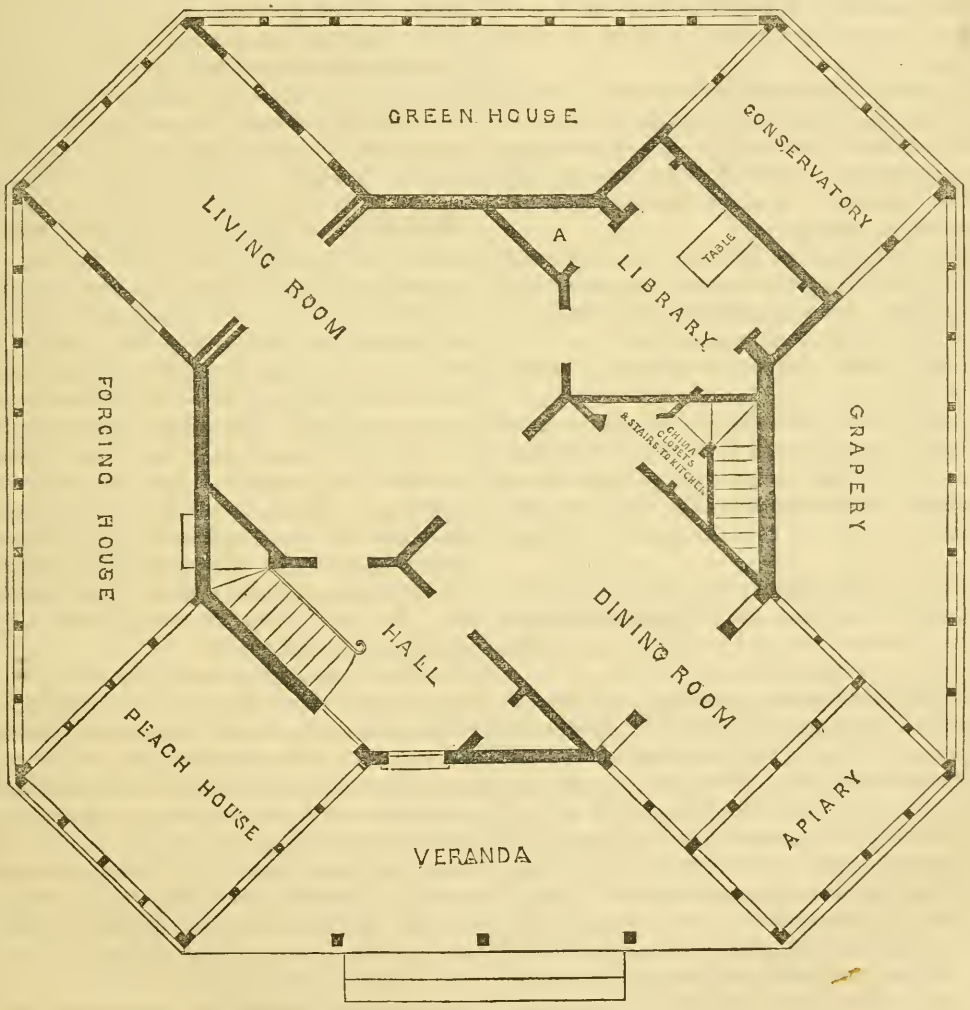
PLAN FOR A GARDENER'S DWELLING.

(*See Frontispiece.*)

BY GEO. D. RAND, NEW BRITAIN, CONN.

I SEND herewith, for the inspection of the readers of the *Monthly*, a plan for a small dwelling, combined with a compact system of glass structures, such as perhaps would be suitable on a gentleman's estate. It has afforded a little recreation to myself, and I would now be glad to know if more experienced gardeners can discover any serious difficulties in the way of its practical working.

Let me first describe the plan, and afterwards allude to some of its advantages:—



GROUND PLAN. (*Scale* 12 *feet to the inch.*)

An octagonal building of brick, two stories high, occupies the centre. Abutting upon each of the four alternate faces of the octagon is a span-roofed glass-house. Three of the remaining faces are occupied by lean-to glass sheds, their sides being formed by the sides of the span-roofed houses. A porch or veranda fills up the only remaining side. Under this veranda is the entrance to the hall of the dwelling. The hall contains the staircase to the chambers and doors to various apartments. The living-room is partly within the central brick building, and partly under glass. The two portions are separated by sliding-doors, which are intended to be kept open by day, and perhaps never closed save in cold winter evenings. The dining-room also extends partly under the glass, having a glass partition

at the outer end of the room, enclosing an apiary for singing-birds. The kitchen is in the basement, under the dining-room and apiary; and at the head of the kitchen-stairs are the china closets, cupboards, etc. The library is lighted only from above in this plan, although, on many accounts, it would be pleasant to have the conservatory in connection with the library. The bookcases can be built in the walls, and a closet is shown at *A*.

There are four chambers, and, in the attic, two bedrooms.

The whole is intended to be heated by steam, and the kitchen provided, as far as possible, with steam appliances for cooking. The furnace-room can be reached either from the kitchen, or by stairs leading from what is marked "forcing-room" under the main staircase.

The uses to which the different apartments would be put would depend, of course, upon the wishes of the owner and the exposure—the lettering in this case being simply for convenience.

Consider briefly, now, a few advantages secured by this plan:—

I. A back wall is provided by the octagon for all the glass ranged around it, bringing everything into a compact form, where every part contributes something towards the protection of all the rest, and makes it easy to heat the whole by a single fire.

II. It brings the gardener's home and his work together, so that either himself or his family may be always at hand to attend to the fire, the ventilation, visitors, or purchasers.

III. The living-room, extending, as it does, so far under the glass, would be a most cheerful and healthy apartment. It would especially be grateful in those sunshiny days of autumn, winter, and spring when the direct rays of the sun are so much more welcome than artificial heat. We might be sure that every tint abstracted by the sunshine from the carpet would reappear in rosier hues on the cheeks of the inmates. If our American ladies *will* stay indoors, let us make our doors, and roofs also, of glass, and then the Great Artist's pencil will touch them, as it does the flowers and the clouds, with

> "Hues so bright, so wonderful, and rare,
> That human language cannot give them names."

Whoever has enjoyed a south-side bay-window in November days, when there was a sharp, chill air without, while within a soft flood of sunshine filled every part, will appreciate the healthful, invigorating influences of sunshine. How much more cheerful such warmth and light than the sombreness and closeness of a stove, or furnace-heated, curtain-shadowed apartment!

IV. Investigations in vegetable physiology, during the last few years, have exploded the old notion, derived from a half truth, that plants in dwellings are not healthful to the inmates. This theory is now believed to be untrue, with the perhaps possible exception of some strongly odorous plants. When we know the part performed by aqueous vegetation in aerating the water of aquaria, making the stagnant tank habitable by delicate, gill-breathing fish, it is not so difficult to understand the wonderful and analogous process which vegetation performs in maintaining the purity of the air. Animal life depends constantly and entirely upon vegetable life, not alone for food, but for the very breath of life. Millions upon millions of leaves are ceaselessly at work converting the poisonous expirations and putrifactions of animals into oxygen, the most potent of earthly agencies. The inference to be drawn, therefore, is this: As the *external* air is oxygenated by vegetation, why may we not with benefit introduce the same agency into our dwellings? Let us take advantage of this fact, and allow vegetation in our rooms to absorb the vitiated air, returning it again to us pure and fresh from its mysterious alembics. It is a mistake to suppose that plants undo at night all they have done during the day. They never, except in decay, give off any appreciable amount of carbonic acid gas. They are simply quiescent, or less active in the absence of sunlight.

As I understand the question, therefore, there is no reason why we should not have plants in our living-rooms except because, as at present contrived and warmed, *we cannot make them thrive there.* I know there are some exceptions to this statement; and yet the truth remains that we are slowly poisoning ourselves in an atmosphere too dry, close, impure for healthy plant life. What, then, is the remedy? Obviously this: Connect our rooms with other apartments in which the necessary conditions for plant life are maintained. Surround ourselves by healthy vegetation in winter as well as in summer. Make of our dwellings *Atmospheria*—if the word is allowable—bringing into their natural and philosophical relations the two great balancing forces of nature. While building ourselves houses for shelter and warmth, let us not, in securing those blessings, shut out the pure air and sunlight meant alike for man and plant.

V. One word more, in conclusion, as to the opportunities afforded by this plan to the ladies and girls of a family towards obtaining suitable exer-

cise. There would here be furnished them something pleasant to do every day in the year. No matter how cold or unpleasant out of doors, here they would live in the temperate zone or the tropics at pleasure. Here would be beautiful flowers and delicious fruits. January would be brought nearer to June; the perfume of May and the spicy fragrance of September could be inhaled at a breath, and the pleasure repeated at will from one May to another. And all this so temptingly near that the most languid devotee of fashion and idleness could not resist the impulse to witness day by day the changing beauty, nor, at length, refuse to assist with her own hand in adding to the attractions of the place.

DR. PUFFER ON GRAPE CULTURE.

BY WILLIAM BRIGHT, PHILADELPHIA.

In reply to Dr. Puffer's denunciation of my plan of grape culture, in the last number of the *Monthly*, I might be justified in the use of harsh and sarcastic language, if I were disposed to meet that writer with his own weapons. But I understand that the Doctor is an intelligent and earnest friend of horticulture, and I therefore propose to treat his remarks in quite a different vein. That the Doctor has met with poor success in the culture of grape-vines, in an inside border, I have no doubt; but that his misfortunes do not condemn my system of grape culture to the extent he assumes, I think I can readily prove.

What is the gist of the Doctor's charge against me? Why, that his inside border required a great deal of watering, in hot weather, and that the vines did not make a good growth. Now, we have no means of knowing how his border was constructed, though he states the nature of the compost which was put into it. Inside borders are now almost universal in England and America, and are found to possess advantages so great that many failures to grow grape-vines in them, on the part of single individuals, will not have much weight with those who know how to use them, and who appreciate their vast superiority over outside borders.

An inside border, however, unless constructed strictly according to my directions, cannot be called *my plan*. The Doctor does not state whether his was a detached border, or not. For aught we can tell, it may have been the Doctor's own plan, and not mine at all. Beyond the border, the plan evidently was *not* mine. I call special attention to this point. The house, he says, was 21 by 30, span roof. According to my plan, this house should contain only thirty vines, fifteen on each side, planted two feet apart. The Doctor says he planted sixty vines, setting them in *five rows*, two feet apart—leading to the inference that he actually *planted a vineyard* in his vinery, "with the vines trained nearly perpendicularly," to use his own words. Now, if any one can find in my work on grape culture, or any where else, any plan of mine which resembles this, then I will consent to bear all the odium that the Doctor desires to cast upon me for his want of success. The fact is, that I have never believed that good vines could be grown on upright trellises, in the vinery, and have always earnestly opposed the attempt. The true plan is to train the vines along the rafters, within eighteen inches of the glass. I should as soon think of growing lettuce in a hotbed, five or six feet from the glass. Pot-vines, not over three or four feet high, may be grown and fruited with perpendicular canes when properly prepared by stopping; but *rows of vines* on upright trellises have never been found to do well. Again, a house of the size named by the Doctor could not possibly grow sixty vines successfully upon any plan that I know of. Thirty vines, which would be planted in such a house under my system, is double the number that would be planted on the spur system. So that the Doctor was evidently crowding the matter rather severely.

I have therefore shown that the Doctor did not make his border after my plan (which would not admit the planting of sixty vines), nor did he plant after my method.

Now as to the watering. The Doctor apparently wrote his article in a fit of irritation, and the whole tone of it is one of careless exaggeration. He says it required three hours per day, spent in watering, to keep up a tolerable degree of moisture in the border, in a hot day. Now, I have houses, fourteen feet wide, and over one hundred feet long, with front and back borders, containing one hundred vines, built on my plan, which only require thorough watering, or "soaking," as we style it, once a week in very hot weather, and the same syringing and sprinkling daily that is employed in houses with the more common borders. It is true, we have a paved path, on which water is poured, and an open trough, or pans, for evaporating water. But one hour per day is amply sufficient, with a proper force-pump, for watering and syringing in hot weather. For watering alone, it would not require half that time.

Another point worthy of notice, in the Doctor's report, is the matter of ventilation. He says his top ventilator was two feet wide the whole length

of the house, and that "it should have been four," from which I infer that he considers free ventilation, in hot days, very important. Now, the fact is, as I have constantly advised, that the only way in which the proper humidity of a grape-house can be preserved, in a bright July day, is by *closing the ventilation entirely*, when the flagging foliage will immediately revive. If the Doctor thinks top ventilators, four feet wide, the whole length of the house, ought to be kept open in hot weather, he is no disciple of mine.

Again, the Doctor says he lost his foliage in a single night by frost. All I have to say is, that good cultivators of the grape don't permit such an accident to happen; or, if it does happen, they don't say much about it. I do not see how I am to be blamed for it; but I do see how this fact tended to increase his failure.

That an inside border is vastly superior to an outside border, I have no sort of doubt. I am by no means apprehensive that Dr. Puffer will put an end to their use or construction by experienced grape-growers. Nor do I fear that his article will annihilate my system of culture, for it is too widely introduced, and is too successful to be destroyed even by his dogmatic declarations. There is one house, here in Philadelphia, built at the same time that Dr. Puffer's was (but strictly upon my plan), which has already produced one fine crop of grapes, and is now in condition, I think, to become the subject of a report, next season, that will form rather a striking contrast, in its results, with the Doctor's failure. I hope to show some canes and fruit, from this house, at the meeting of the "National Pomological Society," at Boston, in September next.

As it is important for the public to know the results of planting and working upon my plan of culture, I shall be glad to have those who have built houses and borders according to my directions to send me, during the ensuing year, brief reports of their success or failure; and I promise faithfully to publish them for the information of horticulturists. A great number of persons write to me, expressing their satisfaction with houses built after my method; but I have never made any record of these cases, and can only now state the results in my immediate neighborhood, which are in the highest degree encouraging. I stated, in the *Monthly* for January, that it had been found desirable to make inside borders very compact (not light and porous), to prevent the too rapid loss of water, by filtering through them, and to this end advised packing the soil, when dry, very firmly and closely, with a rammer, just as we do in potting. This obviates, in a great degree, the chief difficulty of which Dr. Puffer complains. I have no doubt that, by making even a small inside border very compact in its texture, the vines would succeed perfectly (especially if some light carbonaceous mulching were also used), with a good soaking once a month, instead of once a week; so that the Doctor, if engaged in tending such a border, would be no longer an unfortunate "wet-nurse," as he expresses it, but would be elevated into the more agreeable position of *monthly nurse* to his sixty grape-vines, which perhaps he would not object to.

In conclusion, I maintain that Dr. Puffer has not built or worked his grapery on my plan, and hence I am in no degree responsible for his failure; and I further say that I know my plan is not a failure elsewhere, but an important success. Inside borders, I believe, will be employed long after both Dr. Puffer and myself shall have ceased to have cognizance of terrestrial grape culture.

FLOWER GARDENS.

BY E. D., MITTINEAQUE, MASS.

THIS being the season for making plans for flower gardens to be laid out the coming spring, greater interest in the cultivation of flowers might be promoted by different parties giving, through the columns of your valuable *Monthly*, their experience in massing flowers. As each person has different tastes, we all might be benefited by comparing notes.

For my own experience, I find that in small beds the following kinds look well when grown together:—

"Calceolaria pinnata," bordered with "Whitlavia grandiflora," will grow best where they are shaded till ten A. M.

"Gypsophila muralis," with a border "Fenzlia dianthiflora." The seeds of both varieties being very small, it will be necessary to sow in a seed-pan in the house, and transplant.

"Alyssum maritima"—mix with "Whitlavia grandiflora," three plants of the latter to one of the former.

"Crimson candytuft," surrounded by the purple variety, bordered with the white. This should be cut back as fast as out of flower; for, if not allowed to seed, it will blossom through the season.

"Feverfew," bordered with "Double Senecio;" various colors.

"Delphinium cardiopetalum," bordered with "Gazania splendens."

"Lantanas," mixed with "Heliotropes."

"Lantanas" should be potted without crocks, plunged in the bed, and allow the roots to grow through the pot; for, if transplanted to rich soil, it makes too much growth, with a loss of flowers.

"Gilia tricolor," with a border of "Lobelia rosea." (?)

"Linum coccineum," bordered with "Neirembergia gracilis."

"Phlox Drummondii" should be sown in rows between "Phlox occulata" and the pure white variety. Sow very thick, so as to prevent straggling growth.

CRITIQUE ON THE FEBRUARY MONTHLY.

BY DR. GEORGE P. NORRIS.

Learning that our remarks on the January number came to hand too late for insertion, we propose a few words on this month's number, if it will not make too lengthy an article.

"Miscellaneous Sketches," by Orchis, are very agreeable reading, and it is hoped there will be more of them.

"History of the Vine" comes in at a very appropriate time, when so many are laboring under the "grape mania," although we fear the statement that bunches were borne in the olden times measuring one yard in length will not go far to alleviate the disease.

The Editor's remarks about "Hanging-baskets" are very just. What there is about them to entitle Mr. Chamberlaine to a patent we are unable to discover. That any one can grow a pine or a vine in a basket, with the proper materials, as well as in a pot, seems so plain that we cannot, for the life of us, discover the object of the patent.

But the cream of the whole number is reserved for the article on the "Comparative Profits of Native and Foreign Grapes;" and from our supposed knowledge of the Editor's predilection for out-of-door culture, we are agreeably surprised at his conclusions—in this debate respecting the merits of the natives and foreigners—we have no hesitation in saying that it has afforded us sincere satisfaction to believe that the former thus far have much the worst of it. Without disparagement to our native grapes, in which, during the last few years, a marked improvement has taken place, we cannot resist coming to the same conclusions with the Editor, that, for profit, the European varieties offer the best field. Of all the out-of-door varieties, the Concord will generally give the greatest satisfaction; but to grow it in perfection will require the same amount of time, as good a border, and as annual a pruning as the Black Hamburg under glass in a cold vinery; and of the merits of the two kinds, when well grown, any one who has eaten both in perfection can judge. That the native varieties are useless, we deny. In the sheltered city yard, with attention, fine fruit may be had; and at the West, possibly vineyard culture may and does prove remunerative; that it will hereabouts, we have yet to learn.

Cold vineries are destined to become more popular as their cheapness is learned and their easy management discovered. The roughest kind of a shed, with a glass roof and a dry border, will produce so far superior an article of fruit, with the same attention, except the thinning, that they must, when generally known, take the place, to a considerable extent, of the varieties grown entirely without protection. The rapidly increasing number of vineries goes but to establish this fact. It will not do, at this late day, to say that they are only for the gardens of the wealthy. Cottages with but little pretension, with their cheaply constructed vineries, are becoming as common, almost, as the old-fashioned grape trellis; and any one feeling the slightest interest in the matter can enter upon the culture of the foreign varieties under glass without fear of the mortification of failure.

[We have omitted our correspondent's remarks on Dr. Puffer's article, as Mr. Bright himself in another column has taken the subject in hand.—Ed.]

MISCELLANEOUS SKETCHES.

BY ORCHIS.

> "And over head up grew
> Insuperable height of loftiest shade,
> Cedar, and pine, and fir, and branching palm,
> A sylvan scene; and, as the ranks ascend
> Shade above shade, a woody theatre
> Of stateliest view."

The readers of the *Horticulturist*, a few years since, doubtless remember a series of articles published in that journal on the "Trees and Pleasure Grounds in Pennsylvania," which were so beautifully described by a "Massachusetts Subscriber." These descriptions were confined to the ancient botanical collections of the Pearces, Bartram, and Marshall, thereby leaving unnoticed several, which, although not celebrated for their antiquity, are eminently worthy of notice. The most prominent among such is the subject of the following sketch.

Through the instrumentality of the gifted pen of Dr. Darlington, the memory of those indefati-

gable pioneers in American botany will be handed down to future generations as bright examples of the pursuit of science under almost insurmountable difficulties; and already the influence of their labors is being appreciated by the numerous collections now being formed in different sections of our country.

The botanical gardens of John Evans, situated in Radnor, Delaware County, Pa., not only contain excellent specimens of the old well-known species, but are remarkably rich in the introductions of latter years; thus greatly enhancing the interest to a botanist visiting these grounds. It was the Mecca of my youthful imagination; and certainly no devotee ever commenced his pilgrimage to the city of his devotion with more joyful anticipations than did the author of this sketch during his first visit to the place.

The landscape gardener might be inclined to criticise the arrangement of the plants, as well as the manner in which the grounds are kept; but as it was evidently the intention of the proprietor to form the collection for the pure love of nature, he has consequently attempted no studied design; but all are growing as if nature had intended it so to be. The spiral fir, the drooping spruce, the umbrageous oak are so dispersed as to relieve the eye from a monotony too often seen in many artificial landscapes. The vines of various form, clinging to their natural supports, or trailing on the ground. The shrubs from every clime, growing in clumps and belts; and even the smallest plants are placed in situations best suited to their habits, without regard to art.

Surrounding the residence of the proprietor, and in every direction along fence-rows, bordering the streams, shading the old mill and farm buildings, and in fact in every available place, is growing the collection of a life-time.

The situation of these grounds is one that is rarely surpassed, as it abounds in a diversity of soil and exposures, with streams intersecting it in many places.

The hilly portions are mostly covered with old timber, thus affording an excellent opportunity to encourage the growth of many plants that would otherwise prove extremely precarious.

One of the first objects of interest upon nearing the place is a fine collection of Cratægus (thorns), consisting of a large number of species and marked varieties. These skirt the road for some distance.

A large specimen of the Carya oliviæformis (pecan-nut), towering above the surrounding plants, is one of the finest trees in the collection, and also forms a distinguishing object on approaching the grounds.

Near the homestead is growing a magnificent specimen of the Abies Douglasii, probably fifteen feet high. The long drooping branches are of the richest and darkest shade of green; and so perfectly is it adapted to the situation that, with the exception of the severe winter a few years since, it has received no injury.

In the same locality are growing a number of large pines, embracing a few that are quite rare. The best among these is probably the P. Lambertiana. This is truly beautiful, and highly deserving of cultivation. The P. cembra, close by, does not thrive well from some unknown cause, although succeeding well with other planters in the same section.

A few rods further on, and bordering the pond wherein are growing the aquatic plants, are a number of fine specimens; and here is to be found one of the most beautiful species of the entire Coniferæ, that withstands the severity of our northern winters. This is the Picea pichta, a large, splendidly formed plant, whose rich, dark foliage, and unexceptionable form is the admiration of every beholder, and especially so to a botanist. Taking into consideration the shape, color, hardiness, and perfect adaptability to almost any soil, this fir is unsurpassed; but unfortunately, owing to its rarity, young plants command a high price.

Near by are growing two fine plants of the rare American tree, Gordonia pubescens (Franklinia), which, during a recent visit, were covered with a profusion of large cream-colored flowers, that filled the air for a great distance with the most exquisite fragrance. The collection of willows in the same locality is extensive and fine.

Crossing the road, and descending into a little valley, we find the garden containing herbaceous plants and shrubbery. We notice particularly here a splendid plant of the Gynerium argenteum (pampas grass). The greater part of these plants were collected by the proprietor during his extensive researches along the lakes at the north. Many of these are rare and worthy of note; but space will not at present permit. On the opposite hill-side, and apart from the main portion of the collection, the Rhododendrons and Azalias grow in all their native luxuriousness, and when in bloom are a splendid sight.

Upon retracing our steps to the mansion, and proceeding in another direction, we will observe an extensive plantation of the Berberis family. The greater part of these being the discoveries of Dr.

Hooker are consequently very rare; and many are in no other collection in this country.

Adjoining these, and attracting the eye immediately upon entering the enclosure, stands the oriental-looking Cunninghamia, with its broad Araucaria-like leaves, and stiff, erect habit of growth. This very fine specimen, being in a sheltered situation, succeeds admirably, and has now reached the height of probably nine feet. The Cryptomeria, close by, although of large size, is wanting in density of foliage, and does not preserve that richness of appearance so beautiful in a conifer that is perfectly healthy.

Here also is a pair of fine plants growing side by side of the Euonymus linifolius (D. C.), and E. Americana. These, owing to their age and manner of training, are remarkably fine.

On the hill-side above is a newer plantation, composed of plants but recently introduced, and embracing many interesting things, especially among the Coniferæ. Bordering these, however, are a number of large pines, but rarely found in cultivation.

To enumerate even the rare trees and plants to be found in this collection would fill quite a volume; much less could they all be noticed in a brief description such as this; and so large and varied is the number that the visitor will invariably leave under the impression that he has not seen them all, which is very likely to be the fact.

Before closing this description, I would like to enumerate a few of the finest plants that would interest the lover of botany.

The Magnolia family is well represented by large specimens, finely proportioned, and in blooming condition, as are also many rare species of the Pyrus. Excellent plants of the different kinds of Acer, Fraxinus, Taxodium, &c., &c.. are also growing in all their native beauty. Amongt these, and worthy of particular notice, is the largest Acer macrophyllum I have ever seen, perfectly healthy, and especially handsome. A large Taxodium sinense—*Noisette*, (Syn. T. distichum pendula—*Loudon*. Glyptostrobus pendula—*Endlicher*, &c.) is also of remarkable beauty.

In a quiet, sequestered part of the grounds is located the private cemetery, where, beneath the overshadowing boughs of the choicest trees, and encircled by the most beautiful plants, lie the remains of the proprietor's family who have departed this life. No marble slab or costly urn marks the spot "where affection loves to linger;" but nature, by the aid of man, has shed her rarest bounties on the place.

The graceful feathery branches of the hemlock wave above the graves; whilst from out their midst the bluebird's early song, or thrush's later notes, continually fill the air with melody, in unison with the music of the wind through the branches of the pines. The spot is chosen well. Apart from the turmoil of the busy world, and surrounded by the plants he has loved so well, the originator of this beautiful collection has selected a portion for his last resting-place. But long may he be spared to enjoy the fruits of his labors before becoming a tenant thereof.

The following appropriate lines, written by Byron, came to my remembrance during a recent visit to this place:—

> "Here might I sleep, where all my hopes arose,
> Scene of my youth, and couch of my repose;
> Forevever stretched beneath this mantling shade,
> Pressed by the turf where once my childhood played,
> Wrapt by the soil that veils the spot I loved,
> Mixed with the earth o'er which my footsteps roved."

STRAWBERRIES.

BY JOHN SAUL, WASHINGTON CITY, D. C.

As the season for planting strawberries is approaching, amateurs will be considering what varieties are most desirable. I will submit my experience of what I consider a few of the most valuable for this class of cultivators, or indeed market-gardeners, if they will give them only ordinary good culture. These are selected from a very extensive collection, *carefully tested* for some years, and to which all the novelties have been added as they appear. My readers must not be startled by my recommending foreign sorts, especially when I support it by informing them that foreign varieties, and foreign exclusively, are grown by the best market-gardeners that supply our market. Persons have asserted that those varieties are not so productive as the native sorts. Numerically, the fruit may be greater on the latter; but the weight of both compared will be unquestionably in favor of the former. That they are more remunerative I think is conclusive from the fact that our market-gardeners continue to grow them.

The prejudice against foreign strawberries must have arisen from the fact that many of the first imported were unsuited to our climate, such as British Queen, Keane's Seedling, Bicton Pine, &c., either by their burning under our hot summer suns, freezing out in winter, and other causes. We now, however, possess varieties with foliage proof against our hottest suns, and which the cold of our severest winters (in this latitude) have no effect

upon. The crops of fruit which they give us in productiveness is all that can be desired, with a flavor that is exquisite.

Seedling Eliza (Rivers').—This superb variety I place at the head of my list. The fruit is of the largest size, bright scarlet color, and the most delicious flavor. It is very productive, giving its immense fruit in great profusion. The plants, or "stools," of this are very large, with high, broad foliage, which resists alike our burning suns and biting frosts. The plants should be grown in hills, with ample space between.

Vicomtesse Hericart de Thury.—It is now some years since I introduced this valuable variety. Cultivators at first received it with caution. It has, however, worked its way into universal favor. Fruit of fair size, bright scarlet color, exquisite flavor, very productive. Plants have large strong crowns, with broad leathery foliage, which is never effected by our most scorching suns or our most intense cold. One of our best strawberry-growers remarked to me that he considered this the hardiest of all strawberries.

Jucunda.—After cultivating this some four or five years, it is annually growing into favor with me. Fruit of largest size, bright scarlet color, superb flavor, and a profuse bearer. The plants are strong and vigorous, with broad, enduring foliage, not liable to burn in summer, or be injured by our intense cold. A noble fruit, deserving of extensive culture.

Triomphe de Gand is perhaps better known than the others I have described, having fought its way to favor north and west, as well as in the region from whence I write. The fruit needs no description at my hands, its size, beauty, and flavor being well known. Plants hardy, with large, firm foliage, not liable to suffer from scorching and freezing. An excellent variety, which cannot be too much commended.

Comte de Flandres is somewhat like the preceding. The fruit is large, conical, bright crimson, very fine flavor; excellent bearer. Plants hardy, with firm, enduring foliage, never sustaining the least injury from hot suns or severe freezing. An excellent, hardy, productive variety.

Victoria (Trollope's).—One of my neighbors has for some years grown this variety to perfection. It is, however, variable. On maturing its fruit, it requires warm, bright weather, otherwise the fruit is liable to be pale in color, and rather acid. Fruit large, globular; when well matured, a bright scarlet, with good flavor; very productive. Plants vigorous, hardy, having large firm foliage, and withstanding well the heat of summer and cold of winter.

The above list could be extended with many excellent varieties; but I prefer confining myself to a few, and those few of such sterling merit as must universally please.

Native varieties are as numerous as the foreign. My great objection to nearly all is want of size and flavor. Hovey's Seedling, take it all in all I consider the best of all American strawberries. Whilst giving this as my opinion, I am fully aware in some sections of the country, and in some societies, it has been condemned. There may be soils and climates not suited to this valuable sort; but about our city, in the hands of intelligent cultivators, it has proved itself immeasurably ahead of all other native sorts. *Fillmore* (Feast) is very good; large, good color, rich, and very desirable. *Wilson's Albany* can be recommended for its immense productiveness only, being sadly deficient in flavor.

A PARLOR CONSERVATORY.

BY JOHN HITZ, JR., WASHINGTON CITY, D. C.

LAST fall, I devised the following plan for a little parlor conservatory, but circumstances were such, and have remained so ever since, as to prevent me from having one made. The idea I think, however, might prove of use, and give pleasure to other readers of your *Monthly*, and I tender it therefore to you for publication, should you deem it worthy thereof.

EXPLANATION OF ENGRAVING.

A. Hexagonal glass case, with door (*a*) and metal beading or frame.

B. Water-tight ornamental top tank.

C. Water-tight bottom tank.

D. Small leaden pipe to convey water down from tank *B*, at No. 1, turns at No. 2 in tank *C*, runs along its bottom, then rises in the centre amidst an irregular mass of fragmentary rocks, and is furnished with some miniature ornamental fountain head, having very small apertures.

E. Wooden case, with door (*e*), the whole placed on porcelain castors.

F. Pipe to convey off the superfluous water from tank *C*, commencing nearly at its top at No. 4, passing thence down into case *E*, and then entering bucket *G*.

G. Bucket for waste water; when full, can be emptied into tank *B*, so as to be used again whenever it is desired to have the fountain play, which can be regulated by means of the stopcock *L*.

H. Two glass ventilators opposite to each other, made to open on an axis (3).

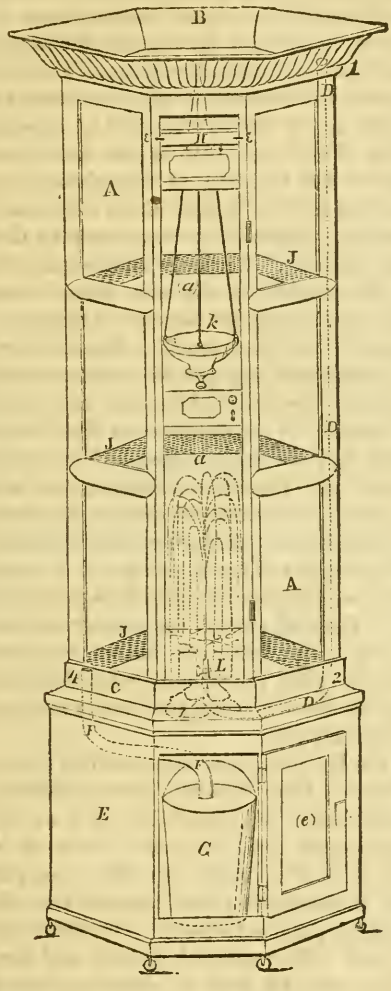
J. Shelves made of copper or brass wire, five inches wide—the lowest for ferns, and the upper for miscellaneous plants.

K. Hanging-vase for air plant, musk, or mosses.

L. Stopcock.

In tank *C*, gold or other small fish may be put.

A small thermometer should be kept hanging in the case for the purpose of keeping up a regular temperature.



A conservatory of this kind would, I should judge, in the coldest weather, need no greater heat than would be thrown out by an ordinary coal-oil lamp, hung up inside in the place of the hanging-vase, and, where parlors are kept moderately warm, would need no extra heat at all. It would, according to the season, be moveable to the sunny or shady part of the room, be free from dust inside, and retain a proper degree of moisture. With a little taste in selecting, re-arranging, and from time to time changing the plants, what a delightful and ever-varied parlor ornament we could thus be possessed of for the gratification of ourselves and friends!

[We should like to make a few remarks on this excellent idea, as well as on other valuable hints offered by some of our other intelligent correspondents; but want of space prevents us, and we have to defer them to some more favorable opportunity. —Ed.]

New or Rare Plants.

Pinus Koraiensis, *Siebold, Fl. Japan.*—This new pine is a relative of Pinus Cembra, from which it differs in having shorter glaucous leaves, and large oblong cones with wrinkled leathery scales, the points of which are turned back. The seeds are large, wingless, and somewhat like those of the Stone Pine. It has been sent home by Mr. John Veitch, and is now growing in the nursery at Exeter.

Siebold, who alone had previously seen it, says that it was probably brought from the neighboring Corea, and that it is only seen in Japan near temples, and occasionally grown in gardens. He received from the Corean mariners cones with fresh seeds, which are eaten as those of Pinus Cembra are in Siberia, and perhaps it is a strong variety of that species. What seems to be the same species was found at St. Peter's and St. Paul's in Kamtschatka in Lutke's expedition. It must therefore necessarily be able to brave the utmost rigor of an English winter.—*Gardener's Chronicle.*

Philagathis rotundifolia is one of the most beautiful stove plants which have been recently introduced. It is as valuable for its flowers as for its foliage, which is rarely the case. When full grown, the plant produces about four pairs of large ovate leaves. They are of a bronzy color upon the upper side, and very glossy. The under side is of a dull crimson color. The flowers are produced in a close globular head. Only two or three are opened at a time, so far as we are able to judge at present, for we have only twice seen it in bloom; but they are of a very bright color, of a similar tint to the now fashionable "Magenta." The plant seems to grow most satisfactorily if kept covered with a handglass, and plunged in bottom-heat. It was first introduced to the Botanic Gardens at Kew, but soon afterwards found its way into some of the Belgian nurseries. Like the Begonia, it is easily propagated, and will, therefore, soon become a popular plant.—*Scottish Gardener.*

Parochetus Communis is a trailing herbaceous perennial, with clover-like foliage, and large auxilliary light blue flowers, which may become a pretty basket-plant, for which its habit is well adapted. It is from the Neilgherry Hills.

The Gardener's Monthly.

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☞ All Communications for the Editor should be addressed, "Thomas Meehan, Germantown, Philadelphia," and Business Letters directed to "W. G. P. Brincklor, Box 406 Philadelphia."

☞ Persons sending two new Subscribers for 1862 in addition to their own, with $3.00, can receive a copy of our First Volume, (1859) free. All persons who have paid their subscriptions for 1862, by sending two new Subscribers and $2.00, can receive a copy of the same.

HORTICULTURAL SOCIETIES AND THE HORTICULTURAL COMMUNITY.

Next to an enterprising horticultural journal, an influential and energetic Horticultural Society exerts the highest influence on the refinement and good taste of the community. As the former appeals to the mind, so the latter engages the senses; and while the magazine shows what should be done, the society reasons by results, and exhibits the sum to the public. We are of the class that preaches,—Horticultural Societies of that which practices. Each is a powerful helpmeet to the other, and we perform but our duty when we point out to the community the claims which such societies have on their enthusiastic support.

All of our readers have heard of the excellence of English gardening. All of this has been brought about within the past fifty years, and mainly through the influence of the Horticultural Society of London True, English horticultural literature generally receives the credit; but it was the Society that made horticulture fashionable, and fashion found the readers. In 1805, Mr. Thomas Andrew Knight and Sir Joseph Banks laid the foundation of the Horticultural Society, and since that time Horticultural Societies and horticultural journals have had an increasing and an astonishing influence, until we find gardening there now the most fashionable pursuit of the highest dignitaries of the land.

Turning to our own country, we need but refer to the influence which the many Horticultural Societies (and particularly the older ones) of Pennsylvania, Massachusetts, and Cincinnati have exerted on their respective communities. Much as they have done, they have not effected what they might, and it is our chief purpose now to make a few suggestions, with the view of encouraging renewed and improved exertion.

America is a puzzle to foreign nations, and we are certainly so, in a great measure, to ourselves. When England goes to war, horticulture is, for the most part, forgotten. At any rate, it thrives there only in times of comparative peace. Thus, though their great Horticultural Society was started nearly fifty years ago, it merely struggled for existence till the wars of the early part of the century ceased, and it was not till 1816, or thereabouts, that the Society had much of a hold on the affections of the community. But with us war seems to develope all our faculties. Certainly horticulture has no cause to complain of our war, when in contrast with its condition under the wars of Europe.

Recently, our distinguished botanist, Dr. Asa Gray, contributed a paper on a botanical topic to the *London Gardener's Chronicle*, and the editor took occasion to congratulate us from that fact, that war had not entirely absorbed our thoughts. What will our English contemporary say when it learns that in the midst of this most gigantic political disturbance, our Horticultural Societies have made a revival, and are meeting with a support in it such as we scarcely ever dared hope for or expected to see? From all parts of the country the most encouraging letters reach us; but we will limit our remarks to what the Pennsylvania Horticultural Society has done, it being more under our eye than others further off.

For the few past years secession had been gaining ground. First members, then exhibitors, and at length visitors fell off, till little of it was left but its constitution and its name. Some of its old friends spoke of making a new affair; but a dispassionate examination plainly showed that the old constitution was good enough. All the Society required was a few improved by-laws, and the infusion of a little life into its executive, who might adapt the exigencies of the times to the constitution as they severally arose. So the first effort—the selection of live men for President, Secretary, and subordinate officers—was made last spring, and the result was surprising. The Society, emboldened by even this shadow of success, mustered enough courage to attempt a hall of its own,—an idea they had scarcely dared to dream of before,—and that, too, they accomplished.

Then some of the far-seeing members (amongst whom it will be no derogation to other active members to name in this particular course, Messrs. Mitchell, Schæffer, Saunders, and Harrison,) saw that though it was very well to say a Horticultural Society was destined to "lead horticultural taste," the influence should be mutual, and that it was ne-

cessary that the Society should, in an equal degree, be led by the community,—in other words, that no society, any more than a business firm, can be permanently successful, that does not *minister to a public want*. So, while taking steps to add new members to the Society, they have inaugurated a new system, by which members are to get the worth of their money. The new arrangements admit two distinct ideas. First. It makes the Society emphatically a school of instruction. Secondly. It aims to make the Society a medium for social re-unions and mutual acquaintances between persons of kindred horticultural tastes. The first it achieves by encouraging competition in horticultural productions, affording facilities for the public use of its magnificent library, and the establishment of a reading-room, with all the horticultural periodicals of the day on its table,—the second by appointing days for mere conversational meetings, and others for lectures by distinguished horticulturists and discussions on gardening affairs.*

Many changes are in the most liberal spirit. Competition is not restricted to members of the Society,—the whole Union is invited. In these days of steam and railroad, there is no excuse for other cities, especially in the items of fruit and cut flowers. The Society also binds itself to give the utmost publicity to its proceedings, so that to exhibit will be one of the best means to advertise. A new and good move, also, is to authorize the names of contributors to be appended to their articles on exhibition. Before, no one knew whose things they were looking at. The rule was for the protection of exhibitors against partiality by the judges; but 99-100ths of the exhibitors would rather run the risk, enjoy the advantages of publicity, and throw themselves on the honor of the judges.

Another excellent change is to limit the size of pots in which plants are exhibited. For every one who would prefer a greenhouse occupied exclusively by only half-a-dozen magnificent specimens, there are a hundred who would prefer moderately grown plants of a hundred varieties. Limiting plants in collections to ten-inch pots will, therefore, have the effect of encouraging this variety. Besides, it is a greater test of skill to grow a large plant well in a small pot, than to grow a large plant in a large pot.

But, to our minds, the crowning achievement of all in the Society as improved is in the attention it has bestowed on the ladies. It is a remarkable fact, that though from the earliest times flowers have received their greatest care and protection from that fairest of all created beings, woman,—man, her professed adorer, has done nothing in his Horticultural Societies for the personal encouragement of her pure and honored taste. Venus may wander through the woods in agony for the absence of her Adonis, and the red roses may spring up from the blood sown by the thorn-wounded feet in pursuit of him, without his bestowing much thought on the roses or the pain that produced them; but the Horticultural Society of Pennsylvania, for the first time in history, reserves a field of competition exclusively for them. The Plutos of horticulture will no more ruthlessly bear off their fair Proserpines while tenderly searching the Ennæan meadows for their floral pets; but go along with them and carry their baskets,—hanging baskets,—for which the Society offers a silver medal,—and consider themselves honored by being the hand-bearers to the fair. We are much mistaken if this act of homage to the fair sex—tardy though it be—proves not one of the wisest acts the Society ever performed; for what the ladies patronize in these days, is sure to prosper.

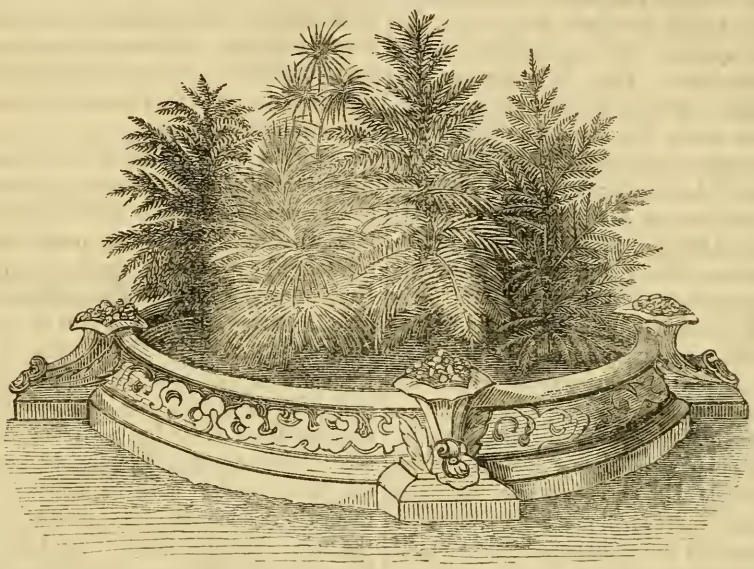
In fine, gentlemen of the Pennsylvania Horticultural Society, and of all Horticultural Societies in general, go on in your good work, improving, and you will prosper. Society wants you, and cannot do without you. You have only to discern its wants in turn, and both parties be suited and mutually satisfied with each other. For what you have done the community will be grateful, and we have no doubt your efforts will be warmly seconded. Each member will feel an individual interest, and each feel it a duty to take or send to each meeting some plant, or fruit, or flower for competition, exhibition, or exchange, or some idea of practical import for the good of his fellow-members and the horticultural community at large.

* In future times, when these horticultural lectures become, as we have no doubt they will, a popular feature of the Pennsylvania Horticultural Society, our friend, Mr, Knox, of Pittsburg, Pa., will have the pleasure of referring to the fact, that, on the invitation of the Society, he was the first to inaugurate this new order of things. His lecture, last month, on the Strawberry, was the theme of universal praise.

WINTER-GARDENS OF EVERGREENS.

We are not alone in our advocacy of winter-gardens of evergreens. Mr. Shirley Hibberd, author of "Homes of Taste," and the principal originator of the now popular run on aquariums and ferneries, has previously written similar chapters for English periodicals. The only difference

between us is that Mr. Hibberd recommends any of the evergreens in common cultivation; while we prefer to confine the idea to dwarf varieties of the common kinds. The tree-growing species, kept in pots or tubs, as we propose, have usually a stunted appearance, and, particularly in our climate, lose, for a sickly yellow hue, that rich green in winter which is their chief charm. Mr. Hibberd gives a sketch of what he terms a "Jardinet," made of artificial stone, which we reproduce below to show the effect when filled with "winter-greens," as we propose.



Alluding to the subject, the *Country Gentleman* suggests that, in addition to the evergreens we propose, handsome berry-bearing shrubs, such as Pyracanthus, &c., should be introduced—an idea that will add much to the interest and cheerfulness of our winter-gardens.

The season is fast approaching when preparation must be made for these things; and we trust the subject will meet with the attention we think it deserves.

DUTIES ON TREES, PLANTS, AND SEEDS.

We are astonished to read in the public prints that the "Massachusetts Horticultural Society" have taken steps to memorialize Congress to impose a duty of 50 per cent. on imported agricultural productions. We have not seen a detail of the reasons which induced their proposal of this step; but, so far as we can understand, it seems a fatal mistake. It would accomplish a little good, undoubtedly. Many seeds and trees, which the climate now enables us to raise only with extreme difficulty, would receive encouragement when the foreign-grown seeds and trees were excluded; and the whole agricultural and horticultural public would no doubt most willingly pay the few growers of these seeds and trees a dollar for them, when they knew they were home-grown, than pay fifty cents to the foreign raiser. So far, there may be no objection, and it was this view no doubt the Society took of it.

If the object were merely a patriotic feeling to offer an horticultural interest to the support of the Government in its hour of trial, why then select some such item as Dutch bulbs, which are mere articles of luxury, and have no influence on the productive interests of the country.

To the improved breeds of animals, plants, and seeds, every nation, and especially our own, owes its chief agricultural and horticultural prosperity. Let us not, for a few advantages in one or two items, introduce standing impediments to our progress in every other respect. It is not wise to kill the goose in order to get at the golden eggs.

The fruit-growers of Pennsylvania seem to take a different view of this question from that of their brethren of Massachusetts. At the recent meeting at Lancaster, a resolution the opposite of that of the Massachusetts Society was adopted with but one dissentient vote.

Scraps and Queries.

☞Communications for this department must reach the Editor on or before the 10th of the month.

☞The Editor cannot answer letters for this department privately.

Standard Authorities on Horticultural Subjects.—"*A Baltimore Subscriber*" asks:—

"I should especially like to have your opinion as to the best

(1.) Text Book of Botany.
(2.) Flora.
(3.) Work on Fruits.
(4.) Work on Flowers.
(5.) Work on Entomology."

[1. Dr. Asa Gray's Botanical Text Book.

2. Supposing a description of the Flora of the United States is meant—Gray's Flora of the Northern, and Chapman's Flora of the Southern United States.

3. Downing's Fruit and Fruit Trees of the United States for descriptions, and Barry's Fruit Garden for practical matter connected with fruit-raising.

4. There is no work up to the wants of the times. Breck's Book of Flowers, and Buist's Flower Garden Directory we consider the best, and both of equal merit.

5. Harris' Work on Entomology is the standard work for our country.]

Pruning the Dwarf Pear.—*Mrs. F., Libertyville, Ills.*—The excellent article of "Wilmington," in our present number, we think answers your questions. If aught further be required, we shall have pleasure in giving any information we can.

Greenhouse and Greenhouse Plants—*J. G. H., Guelph, Canada West*, writes:—

"I intend to build a house capable of containing say 250 plants; a lean-to, the roof glass, with a passage the whole length of the back wall, from which will be the entrance into the hothouse, an entrance under the main stand, and a stove to heat the house. The flue of brick will be carried round the house. On the left hand, in entering, will be a shelf eighteen inches wide round on the flue to the bottom shelf of the main stand, which will be seven feet and six inches into the house; ten shelves in a tier nine inches broad, and eight inches high to next shelf, the space under the stand for rhubarb.

"Would such a house be suitable to grow Achimenes, Hoyas, Lycopodiums, Phœnix hystrix, &c., as well as Pelargoniums, Roses, Camellias, Fuchsias, Rhododendrons, Azaleas, Oranges, Myrtles, Primulas, &c.? The main stand will be three feet from the glass on the top shelf, and five feet from the lowest."

[The plants named should be perfectly successful in such a house—the Lycopodiums, Camellias, and Rhododendrons being grown in the shadiest portions.

W. B. Lawrence, Esq., *of Newport, R. I.*—We have to thank a friend at Woonsocket for calling our attention to a slip of the pen in our notice of Mr. Chamberlaine's moss baskets, by which we referred to *Hon. Abbott Lawrence*, instead of to W. B. Lawrence, as we should have done.

Horticulture towards the Arctic.—"I am much delighted with the *Monthly*, and really find in it more information than in the two dollar monthlies. But if I may be allowed to make a suggestion, as the *Monthly* does not profess to deal solely with the higher branches of horticulture, I think you would confer a favor on others of your subscribers as well as myself if you would occasionally, through the year, give a short article on the best mode of cultivation of culinary vegetables, as well as the best kinds. In our cold climate, we cannot hope to do much with the finer fruits, and a little information about the old kitchen standby's would oblige

An Ignorant Subscriber.

"*St. John's, New Brunswick.*"

[We shall bear in mind our correspondent's wants; and we take the opportunity to express a hope to hear oftener from our friends in the far north as to their experience with various crops in their peculiar climate. This would much assist us in advising them in their various wants. Many of them no doubt suppose but few would be interested by their remarks, which is a great mistake, as our subscribers beyond the St. John's and the St. Lawrence we are pleased to say are numerous—some of them extending to the fiftieth degree of north latitude.]

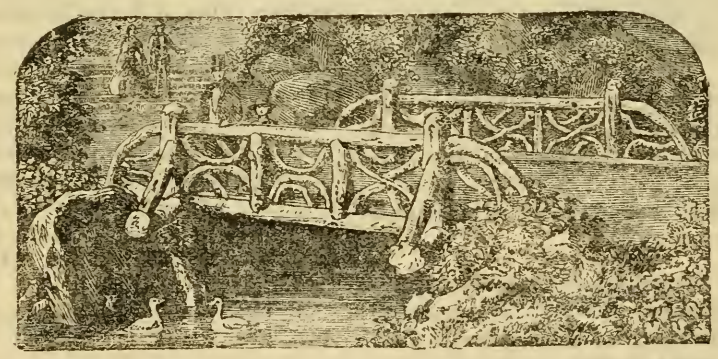
Pear Seed—*E. C. C.*—It need not be frozen, but should be kept moist for two months before sowing, or it will lie over till next season. If seedlings be strong, they are quite as good as foreign ones. For the other facts, much obliged.

Rustic Bridge—*J. W. C.* writes:—

"Through a wood on my place a small stream flows, and through this wood I have recently had a foot-path taken, which will have to be led over this stream. My gardener, whose opinions in these matters I have learned to estimate highly in general, is strongly in favor of a rustic bridge. I am scarcely satisfied that this would look well. What I have seen of rustic work has exhibited too fragile and temporary a look, in my mind, for bridge work, in which strength and durability should, I think, be one of the most prominent ideas. I have compromised with him to leave it to you, and abide by your decision."

[Your gardener is right. Over a *foot-path* in a *wood*, nothing will be so much in keeping as a rustic bridge. You are also right in your views as to strength and permanence being an essential in the idea of a perfect bridge; but rustic work need not be of the frippery character so often seen.

The annexed engraving is made from a design



by Mr. Calvert Vaux, of New York, and has durability and strength marked in every trace. This is intended to be of cedar. If any other wood is employed, we would strip off the bark, and employ a smart painter to imitate different shades of brown, so as to remove the bad effect which rustic work usually has when the bark is removed.]

Root-Grafting the Pear—"*S.*" writes:—

"On the subject of root-grafting the pear, there seems to be much obscurity. The writer has dealt more or less in stocks, and has been the recipient of many inquiries concerning root-grafting the pear. The result of my own experience, combined with my observation of experiments, in grafting the pear, conducted in the most careful manner, leads me to think that root-grafting the pear is a failure. Of fifty thousand that I have known to have been carefully grafted, not one thousand have lived. I am sure that thousands of pear-stocks and much money is yearly wasted, by beginners in tree-raising, from not being acquainted with the facts.

"Now, Mr. Editor, if pears can be successfully grafted, I think it is due to the readers of the *Monthly* that they should know *how* it is done. If it cannot be done, I am sure the information would be welcome to many."

[We have never known any great success result. When at Lancaster, recently, we heard a fruit-grower say he had been very successful. We forget who he was, but should be favored by a detail of his experience.]

Basket Plants—*S. H. H., Port Byron, New York*, says:—

"I wish to purchase, the coming spring, a few of the handsomest and most desirable leaf and trailing plants for basket culture, to suspend from the rafters of my greenhouse; also the *modus operandi* of their culture. Where can they be obtained, and what is the probable cost per plant?

2. Is there any plant that blooms well during winter in baskets or pots (suspended as above) that is handsome for bouquets?

3. Is the Farfugium grande a trailing plant and good basket plant?"

[1. Almost any plant can be grown in a basket when suspended in a greenhouse. It is only when in parlors or in shady places that any particular selection is desirable. Amongst a host that may be employed in this way in a greenhouse, we name the following—not as the best, by any means, but as a few good ones that readily occur to us, and which can be easily obtained of any respectable florist in any of our large cities, or most of the larger country towns.

Any of the strong-growing ferns, such as Blechnum orientale, Pteris hastata, P. longifolia, Doodia caudata, Nephrodium molle, Pteris serrulata, P. geraniifolia, Polypodium g'aucum, P. aureum, Adiantum cuneatum. Any of the Selaginellas (Lycopodiums), Lobelia erinus, Mignionette, Sweet alyssum, Kenilworth Ivy (Linaria cymbalaria,) Senecio scandens, Saxafraga sarmentosa, Lysimachia numularia. Any of the Achimenes, Cereus flagelliformis. Ivy-leaved geranium, Russellia juncea, Evergreen Ivy; any of the Kennedyas, Manetia bicolor, Begonia parviflora, Torenia Asiatica, Cissus discolor, Vinca Major variegata, Sedum acre, S. Sieboldii, Tradescantia zebrina.

In cultivating basket plants, if the terra-cotta ware be employed, all that is necessary is to see that the hole is kept clear at the bottom to admit of the escape of water. Use turfy, spongy soil for them, and have a care that the baskets never get dry. Perhaps soaking them regularly for a few minutes in water, once a week, is the safest precaution. When wire baskets are used, soft green moss, green side out, must be placed around on the inside to keep the soil from falling through.

2. Nothing better than Lopezia rosea, Sweet alyssum, and Mignionette.

3. Excellent for a centre-piece, when other plants that trail are set around it to hang over the edge of the basket.]

Roses and Evergreens for Cemeteries.—*J. E. W., Chicago, Ills.*, asks for a list of some of the best roses, white or flesh color, tolerably hardy, and adapted to cemeteries.

Also, twelve best compact pyramidal-growing evergreens for the same purpose, and where they can be had?

Roses: *Hybrid perpetual*, Mdlle. Bouveure, Homer, Mad. Talcott, Youland d'Arragon, Marquis of Ailsa; *Bourbon*, Souvenir de Malmaison, Ginletta, Hermosa; *China* and *Tea*, Cels, Madame Bosanquet, White Daily, Pink Daily, Bougere, Triomphe de Luxembourg, Caroline, Devoniensis, Saffrano, Lamarque, Gloire de Dijon, Mad. Bravay, Mad. Willermorz; *Noisette* America, Solfaterre, Aimé Viburt, Woodland Margaret (the best summer white for cutting we have), Mad. des Longschamps, Superba, Washington.

Twelve evergreens might be, 1. Retinospora ericoides; 2. Taxus erecta; 3. Cryptomeria japonica; 4. Juniperus hibernica; 5. Abies Canadensis (must be kept low by pruning); 6. Thuja aurea; 7. Pinus montana (mingho or pumilio); 8. Taxus adpressa; 9. Siberian arborvitæ; 10. Tree box in any varieties; 11. Rhododendrons; 12. American Holly.

Most nurserymen can supply them. We never recommend particular nurserymen in these columns, as it would not be fair to those who use our advertising department.

Winter in California.—A correspondent from Alameda County, under date December 3d, writes as follows. The plants he speaks of are greenhouse plants with us.

"Whilst winter holds you fast, our spring has commenced, the hills being covered with fresh green grass; and in our gardens the Mexican bean, a beautiful vine, is in full bloom, as also are the common and China pinks, Phlox Drummondii, heliotrope, and mignionette. The green dew plant is beautiful, with its bluish red flowers. The geraniums and some other kinds of flowers are also in bloom, with here and there a rose, all in the open air. But the plant that pleases me most now is the clianthus, which, when properly trained, looks always so neat and green, or, in bush, forms bows so gracefully. It is now forming its flowers rapidly, which, in a few weeks, will hang like large, gaudy red bells along its graceful boughs. Our favorite of the evergreen tribe, the ceanothus, will not be far behind with its little blue blossoms, being a native of our mountains. I wonder if you are supplied with it. I expect so; but if not, let me know, and I will save you some seed of both it and the clianthus, which I raised from seed two years ago, and they are now about ten feet high."

Slate Covers for Tanks.—*T. A. S., Ravenswood, N. Y.*, asks:—

"What are the advantages of tanks being covered with wood on top, aside from cost, in preference to slate covering?"

[Where tanks are used for bottom heat, half-inch weather-board is preferable, because it retains heat longer, and does not subject the bed to such vicissitudes of temperature as slate does. The water swells and induces a close joint, while slate frequently favors the escape of too much steam.]

Worms on Roses.—"*Dorchester*," Mass., asks for a receipt for killing green worms on roses in the summer. He has tried whale-oil soap and tobacco-water, but could not see any difference in them. If any have tried any means, he would like to know through the *Monthly*.

[We should like to hear from any of our corre-

spondents that have found any method very successful.]

The Kentucky Coffee Tree is the *Gymnocladus Canadensis*. It was called coffee tree by the original Western settlers, who attempted to substitute its seeds for the genuine article; but it soon fell into disuse.

Names of Plants—*A. M.*—1. "Nutmeg geranium;" 2. Rubus rosæfolius; 3. Acacia lineata; 4. Acacia nitida; 5. Hardenbergia (Kennedya) monophylla; 6. Serissa fœtida.

Books, Catalogues, &c.

The American Journal of Science and Art. By Silliman & Dana. Published at New Haven.

What is called abstract science has ceased to be the property of the few. The immense influence science has on the general affairs of life, and the innumerable ways in which its truths can be applied to our every-day purposes, frequently in the most unexpected and surprising manner, have let it become almost a fashionable study, so much so that it is becoming rare to meet in polite society any one who is not interested and in many cases well versed in some branch of it.

It is needless, perhaps, to tell our readers that Silliman's journal is the organ, so to speak, of the scientific minds of the United States, and that it enjoys a world-wide reputation.

In the number for January now before us, there is much that will interest the scientific gardener. In geology, there is an essay on the progress of the last thirty years in our knowledge of the Older Rocks, by Sir Roderick I. Murchison; one on the Primordial Sandstone of the northwestern portion of the Rocky Mountains, by Dr. F. V. Hayden; on the Red Sand-rock formation of Canada and Vermont, by E. Billings and James Hall.

The botanical department is particularly interesting. Mr. E. S. Rand, Jr., contributes a complete history of the discovery of the Heather (*Calluna vulgaris*) recently found within twenty miles of Boston. The investigations seem to trace it back to the year 1700, and leave but little room to doubt that it is really an indigenous plant, and not naturalized from Europe, as some would suppose. There is also a memoir of Daubenton, the French gardener, who first introduced the potato into France, and after whom the Daubentonia, well known to cultivators of greenhouse hard-wooded plants, is named. The memoir says:—

"Daubenton was ever a lover of plants. In 1797, by order of the Executive Directory, he drew up a plan for the embellishment of the garden of Luxemberg, which he called the 'Grove of all the months.' This plan consisted in uniting in separate groups the shrubs which flower in the same months. This is a kind of floral zodiac which has been more or less realized to the present time. This savant was the real founder of the Cabinet of Natural History of the *Jardin des Plantes*, which originally contained little else than a collection of shells, and which served afterwards to amuse the early years of Louis XV. Many of the specimens still bear the marks of the caprice of the royal infant. By the care of Daubenton, this cabinet in a few years entirely changed its appearance. Minerals, fruits, woods, and shells were gathered from all parts of the world. Then, also, were discovered and perfected the means of preserving all parts of organized bodies. A complete description and catalogue of the Museum was also then begun." He died in 1799.

Of Parmentier, it is said he was born in 1737, at Montdidier, and was most of his life-time an apothecary in the military service of the republic and the empire. He devoted forty years of his life to advocating the use of the potato as an article of food, in opposition to a general prejudice that it was only fit for pigs. The potato is sometimes called the "Parmentiere" in French.

In a notice of a collection of dried plants from the head waters of Clear Creek, in Colorado Territory, made last summer by Dr C. C. Parry, Dr. Asa Gray says are many species either new to botanists, or not before found in this country.

Atlantic Monthly for January and February.

Prof. Louis Agassiz contributes a series of highly interesting articles to this well-known and appreciated magazine, on the "Methods of Study in Natural History," to which we would invite the attention especially of the young. To possess a good system and method in whatever we undertake is one of the essentials of success; and whether or not a person has any taste for natural history in itself, the Professor's account of system will not fail to impress the reader strongly with its importance and the methods of effecting it.

With regard to the best method of study, Agassiz adds his testimony to that of Cuvier, that the best of all methods is *comparison*. We may store

our minds as we like with the heaviest accumulation of facts possible, and yet know really much less than he who, with but a few facts, possesses the power of comparing one with another, and thus forming general conclusions from them. In fact, it is in comparisons that true knowledge lies.

The other articles in the *Atlantic* are of their usual excellence.

In-door Plants, and How to Grow them. By E. A. Maling. London edition. From C. B. Miller, 29 Broadway, New York.

Mr. Miller has done good service to ladies and amateur horticulturists generally, by the introduction of this little book. It is precisely what has long been wanted. As a rule, practical works by foreign authors are ill adapted to our peculiar climate; but this does not so much apply to "in-door plants" which are in an artificial climate, and under artificial rules. The various chapters treat of Seeds and Cuttings, Potting off, Watering, &c.; Flowering Plants for Summer, Out-door Summer-flowering Plants, Winter-flowering Plants, Heated Cases for Conservatories, Flower Stands, Conservatories, Balconies, and Hanging-gardens; In-door Calendar, Special Plants, Glass Cases, Implements and Wants of Culture, &c.

The Rural Annual and Horticultural Directory of Mr. Joseph Harris, Rochester, New York.

This is the seventh annual volume, and comprises a large number of articles on almost every conceivable matter that has any reference to agriculture or rural affairs.

Seed Catalogues.

J. M. Thorburn & Co., New York. This is a standard catalogue of 31 pages, comprising vegetable, field, tree, and other seeds.

B. K. Bliss, Springfield, Mass. A catalogue of 75 pages—the handsomest that ever graced our table, remarkably accurate, and one of those trade productions that does honor to our country.

Dreer's Garden Calendar for 1862; Philadelphia. 75 pages. The directions for plant-growing, scattered through the catalogue, will prove very serviceable to amateurs.

Trees, Plants, and Flowers.

J. Knox, Pittsburg, Pa. Small fruits.
Plumb, Willey, & Co., Madison, Wis.
H. Southwick & Son, Dansville, N. Y.
Thomas Morgan, Lyons Farms, N. J.
John Perkins, Moorestown, N. J.
F. K. Phœnix, Bloomington, Illinois.
John Donaldson, Kittaning, Pa.
Warfel & Herr, Strasburg, Pa.
Isaac Jackson & Co., West Grove, Pa.

New and Rare Fruits.

The Pocahontas Pear.—Mr. B. N. Adams, of Quincy, brought us some beautiful specimens of this Pear, from his father's garden, Mr. Josiah Adams, of the same town. To our taste, it is one of the finest pears we have ever met—not so luscious as the Seckel or Winter Nelis, in their prime, but it has a rich flavor, is juicy, and the flesh is very fine and tender. The tree is rather a slow grower, but is very hardy, and bears annually. The fruit is of medium size, bell shaped, and is russetted about the calyx, and covered nearly over its whole surface with fine russet dots.—*New England Farmer.*

Domestic Intelligence.

The Perennial Tree Cotton of Chili.—The following report on this subject was read at the last meeting of the "Pennsylvania Horticultural Society," and adopted by the Society.

To the President and Members of the "Pennsylvania Horticultural Society"—

A communication through a member, on behalf of the United States Patent-office, requesting "any information on the Perennial Cotton Tree of Chili," has been received by the Society, and referred to its Botanical Committee.

Said Committee would respectfully report that, in the absence of specimens, or any facts beyond what have been presented to the public, they can only offer an opinion that the so-called Perennial Cotton Tree is nothing more than a form of the common cotton of general cultivation.

The main facts relied on by its introducer are that his plant is a perennial, and that it will endure a greater amount of cold than the common herbaceous cotton. This character is not inconsistent with what is already known of the cotton plant. It changes its habits and powers of endurance with the circumstances that may surround it. In this, it possesses a power in common with many other plants. The castor-oil plant (*Ricinus communis*)

is a well-known instance of a plant being apparently a tender annual in some climates, and a tree of considerable hardiness in others.

In the special case of the cotton plant, this matter has been decided by many modern writers. Your Committee will only refer in this paper to one instance.

In the "Transactions of the Linnæn Society," Dr. F. Buchanan Hamilton says of the common cotton: "The plant being an annual, or growing to a small tree with a woody stem, lasting for years, is a mere accidental circumstance, owing to manner of treatment." (Vol. XIII., p. 492.)

He further shows hows this is brought about in the East Indies by the time of sowing. If sown early in spring, it flowers the same year, exhausts itself, and is ploughed under. If sown late in summer, it only partially exhausts itself, and becomes a shrub. If not sown till fall, it forms a woody stem, and then continues for years. He "has seen them, cultivated in the East Indies, at least twelve feet high, and as thick as his leg." He concludes his remarks by observing: "I am confident that *every kind* known in India might be reared in different ways, so as to become an annual, a shrub, or a tree."

Your Committee further observe that the public prints have recently announced that "it is not the *Gossypium arboreum* of Linnæus, as first given out by its introducer, but the *G. acuminatum.*" Your Committee have not access to the works of Roxburgh, who first described this variety, nor to the drawings of Dr. Wight, by whom it has been figured; but in the Flora of India by the latter author (see Prodromus Floræ Peninsulæ Indiæ Orientalis, by Drs. Wight and Arnott, page 55), it is stated that *all* the cottons described by botanists as distinct species are probably only forms of the common cotton, and at best are only three species, characterized by the color of the seed—white, black, or copper colored; and in this arrangement they positively refer the Peruvian cotton to the common form—*G. herbaceum.*

The Committee have therefore respectfully to report that they do not consider the "Perennial Cotton Tree of Chili" essentially different from the common herbaceous cotton of general cultivation, and that they believe its stated hardiness and arborescent character accidental circumstances that will not probably follow it when introduced into other climes.

THOMAS MEEHAN.

("As far as our limited observations enable us to judge, we concur with the foregoing statement prepared by Mr. Meehan.")

(Signed), W. DARLINGTON,
THOMAS P. JAMES,
ALFRED L. KENNEDY,
ROBERT KILVINGTON,

THE EARLIEST PEA.—A correspondent of the *Country Gentleman*, testing a lot of early peas, comprising Early Princess, Prince Albert, Early Warwick, Early Frame, Blackeyed Marrow, Champion of England, Victoria Marrow, British Queen, and Matchless Marrow, finds the Early Princess the earliest. This is the first comparative test we have seen made of this new candidate for our favor.

ILLINOIS COFFEE.—The "Cotton Tree" question being disposed of, "Coffee" takes its place, and we have similar inquiries about it. Of course, it is not coffee, which does not grow in Australia. It is probably some "substitute," on a par with "rye," "beans," &c.; and those who like to run after the "novelties" which ignorant and irresponsible parties offer, had better hand over their money—"only one dollar"—and try "what is it?" for themselves. If those who inquire, can send us *specimens*, we may perhaps identify it for them.

Since writing the above, Hon. M. L. Dunlap sends us seeds which prove to be of the leguminose or pulse family. As hundreds of bushels of peas are now weekly manufactured into the popular "Dandelion Coffee," this pea is "too late" to get up a "new coffee" excitement on.

Foreign Intelligence.

RETURN OF MR. FORTUNE.—He arrived in London from the East, recently, in excellent health, and has brought with him many rare and valuable plants, several of which will excite great floral interest from their being adapted for open air cultivation. Among them are new lilies, convallarias, primulas of extraordinary character, and a rich collection of variegated plants, which have not hitherto been introduced.

GLADIOLUSES FOR AMERICA.—The London *Cottage Gardener* says that the taste for these beautiful flowers was so increasing in America that, previous to the breaking out of the Rebellion, one American firm had ordered 30,000 from a Paris seedsman.

SALT FOR MUSHROOMS.—The London *Gardener's Chronicle* says: "Mr. Ingram has for some time found that watering mushroom beds with a weak solution of common salt contributes much to their fertility, and to the quality of the mushrooms. We have ourselves lately seen a bed in the open air treated in this way, producing abundance of mushrooms, and those of the very finest quality in respect of color, texture, and flavor. Care, however, must be taken not to use too strong a dose, as it might prove fatal

COST OF THE NEW GROUNDS OF THE "LONDON HORTICULTURAL SOCIETY."—Twenty acres in all, and the finishing and furnishing of which, it is said is to cost $25,000 per acre. Various colored gravels for walks between the box edgings have been successfully introduced.

Horticultural Notices.

PENNSYLVANIA HORTICULTURAL SOCIETY.

THE monthly display will be on Tuesday, March 11th. Stated meeting on Tuesday, March 18th.

Under the new arrangement, the first Tuesday evening of each month is devoted to the

DISCUSSIONAL MEETING.

This was held at the Society's new Horticultural Hall on the 4th inst. Subject—"The Application of Manures." This subject was the occasion of a very animated and instructive discussion by some of the leading practical and working members. Mr. James Ritchie, as Chairman, contrasted the old Scottish method of deep trench manuring with the modern system of surface manuring, and showed the great superiority and economy of the latter method. He considered twenty loads put on the surface, and harrowed in, equal to sixty loads buried in the soil. He spoke also of the injurious effect upon the texture of the soil of the long continued use of night-soil, as well as the greater earliness and size, but inferior quality, of vegetables grown by its use. Mr. Saunders and Mr. Eadie also approved of surface manuring, and gave interesting illustrations of its effects.

The members generally advocated the application of manures in the fall, to be ploughed in in the spring, except on very tough clay soils, which should be top-dressed and harrowed in spring.

Surface planting of trees was strongly advised by Mr. Eadie. Lime was generally regarded as injurious for garden crops, though some exceptions were named. The benefit of wood ashes, and the injurious effects of coal ashes, were generally admitted.

Mr. Saunders cited a case of large crops resulting from spreading the subsoil on the surface. He advocated draining, and thought the physical more important than the chemical condition of the soil. Fine charcoal, both as a mulch for and divisor of the soil, and as an absorbent, was highly commended.

Mr. Kilvington had seen apple trees, in the gardens of the suppressed monasteries in England, three hundred years old, still in bearing. They were surface-planted on a paved bottom. Putting manure around a newly planted tree was much reprobated.

It is impossible, in our limited space, to give more than a meagre outline of the very interesting interchange of experience among the members present.

THE MONTHLY DISPLAY

was held on the 11th inst. The few objects shown were handsome specimens, and attracted marked attention.

Messrs. Mackenzie & Son exhibited, as usual, a choice collection of cut camellias, for which they have a wide reputation. They have produced some very choice and beautiful seedlings.

Table designs, very chaste and graceful, were presented by R. Kilvington, and a basket of cut flowers by Adam Graham, gardener to Gen. Patterson. James Eadie, gardener to Dr. Rush, brought some fine cut camellias and charming dwarf azaleas. Mr. Thomas Meehan showed the Cineraria senecoides, an old plant valuable for its resistance of the smoky atmosphere of towns and the dry air of rooms. He has lately revived several desirable and once favorite plants, now neglected or thrown in the shade by modern aspirants. Mrs. A. J. Catherwood's dish of large, fresh, and tempting lemons received the honorable mention of the Committee. Mr. H. A. Dreer exhibited an assortment of porcelain hanging-baskets of various colors and very graceful designs, some of them richly ornamented, and all of American manufacture. The increased attention now being paid to this method of floral decoration merits our favorable notice. We are sure Mr. Dreer's enterprise will meet a favorable response from our lady amateurs.

THE STATED MEETING

was held on the 18th inst. The Committee appointed to prepare a reply to an inquiry from the Patent-

office, addressed to a gentleman of this city, and by him referred to the Society, concerning the Perennial Tree Cotton of Chili, made a full report, which we give in full in another column.

The following persons were elected to membership: Mrs. S. H. Spruill, Miss C. Little, and Messrs. John H. Edwards, John S. Haines, Jesse Burk, and Dr. Louis Jack.

The report of the Committee on procuring the new Hall was presented and adopted. The Finance Committee were empowered to make settlements with members in arrears.

The premiums awarded for objects exhibited at the previous monthly display were as follows:—

Best Table Design, $3, to Robert Kilvington; best Basket Cut Flowers, $3, to Thos. Meghran, gardener to Lewis Taws, Esq.; best six varieties six-cut specimen Camellias, $1, to James Eadie, gardener to Dr. Rush; for fine collection of Camellias, special premium, $1, to P. Mackenzie & Son; for basket of cut flowers, special premium, $1, to Adam Graham, gardener to Gen. Patterson; for collection of Seedling Azaleas, special premium, $1, to James Eadie, gardener to Dr. Rush; for brace of Cucumbers, special premium, $1, to Thos. Meghran, gardener to Lewis Taws, Esq.

The next month's meetings will be held every Tuesday evening at 8 o'clock P. M., as follows:—

March 4. Discussion—"Propagation by Cuttings."
" 11. Display of flowers, fruits, and vegetables.
" 18. Stated Business meeting.
" 25. Social meeting for Reading and Conversation.

Nominations for membership are made at each stated meeting, and acted upon at the next subsequent one.

BROOKLYN HORTICULTURAL SOCIETY.

During the past month, several interesting meetings have been held.

In a collection of cut flowers, Mr. Messelbury introduced a new and commendable feature in a more free employment of ornamental foliage than is usual.

Mr. Brophy exhibited blooms of the Downing camellia.

Mr. C. B. Miller exhibited colored plates of orchidea.

An interesting mode of procedure at these meetings is that ladies and others hand in queries for answer by members of the Society. One was, "Can aquatic plants be grown in a room?" To which Mr. Bridgeman responded, explaining that mud had to be put at the bottom of a water-tank, and the plants set in the mud.

"Is the mistletoe found in this country?" Mr. Fuller responded, No; but a closely allied species was.

"Why fuchsias do not ripen their seed here?" Mr. Bridgeman replied that they did. He found no trouble. The dark-colored varieties were the best to perfect their seeds. The plants should be partially shaded, and not exposed to a hot sun.

Mr. Brophy had seen roses thrive well by having tobacco stems applied to their roots.

Mr. Bridgeman delivered an essay on the Culture of In-door Plants, in which he not only entered into the practical details, but also the chemical composition of the atmosphere, and the physiological conditions of plants.

FRUIT-GROWERS' SOCIETY OF WESTERN NEW YORK.

We continue our condensation from last month.

"Best form of an apple tree?"

Mr. Sharp and Mr. Fish would head very low. J. J. Thomas would not prune high. Mr. Barry would head low.

Some think the head should be formed so high that a horse with plough could work under the branches. This is not necessary. The principal feeding roots are at the extremities, and as far out as the ends of the limbs or further. Manure and culture are not needed under branches. Ploughing injures the roots by tearing and breaking them. The best fruits are produced from trees where the ground under the branches is always shaded. A slight forking under the tree is all that is required.

Mr. Moody differed from Mr. Barry; would head high, and plough under.

Mr. Hooker said different varieties required different modes of pruning.

Mr. Beadle never saw any evil result from low-headed trees, but had found many advantages.

Mr. Hooker opposed extremes. Farmers must use the plough, or not cultivate at all. He would have the heads high enough for this.

J. J. Thomas thought tearing the roots by the plough not the greatest injury that could happen to a fruit tree.

The members left a list with the Secretary. We select the highest votes for the

Best Six Summer Apples—Two Sweet.—Red Astrachan, 12; Primate, 10; Early Harvest, 8; Early Strawberry, 8; Sweet Bough, 12; Golden Sweet, 8.

Best Six Autumn—Two Sweet.—Twenty Ounce, 10; Gravenstein, 9; Duchess of Oldenburg, 7; Porter, 7; Jeffries, 3; Pomme Royal, 3; Munson Sweet, 7.

Best Twelve Winter—Two Sweet.—Rhode Island Greening, 13; Tompkins County King, 12; Northern Spy, 12; Baldwin, 12; Spitzenburgh, 8; Golden Russet, 8; Roxbury Russet, 7; Peck's Pleasant, 7; Swaar, 6; Wagener, 6; Fameuse, 7; Tolman Sweet, 14.

ANNUAL MEETING OF THE FRUIT-GROWERS SOCIETY OF PENNSYLVANIA.

The meeting was held at Lancaster on the first Wednesday in February. In spite of the anticipation of the friends of the Society, that the war fever would militate against it, the meeting was a decided success, both in the attendance of members and in the interesting character of the business transacted.

The former respected President, Dr. J. K. Eshleman, of Chester Co., having declined a re-election, Mr. A. W. Harrison, of Philadelphia County, was chosen as his successor.

The Chairman of the General Fruit Committee reported that the sub-committees of all the counties had failed to report, except those of Philadelphia and Lebanon, from the former of which he received reports on the Raspberries and Strawberries of that county, which, by permission of the Society, had been published in advance in the *Gardener's Monthly* (p. 12, vol. III.); and the latter on Grapes, by Mr. Miller, which was read at the present meeting. We can only give in our present number a very brief abstract of the many interesting matters that we think will interest our readers. In reference to Mr. Miller's report, a striking feature was that the Taylor's Bullit, which a year or so ago he prophesied would "work a revolution amongst grapes," he now estimates far less highly.

To the general public, the most interesting feature of the business is the public discussions. The first subject was the inquiry whether, *in the present state of the market, the further extension of small fruit culture could be safely recommended as a favorable business investment.*

Mr. John Rutter inferred from the fact that in the West Chester market the quantity of fruit offered was annually increasing, that it was because it was profitable. He showed that the prices of fruit did not always fall with the march of time. Peaches that brought $2 50 last season, he had sold similar, years ago, at 25 cents. Yet, as a rule, small prices increased customers, when the prices would rise again. He thought that, in his market, ten times the present amount could be sold, and still leave a good margin for profit on the consequent reduced prices.

He found the strawberry the most profitable small fruit for his circumstances, and the Albany seedling still the most profitable variety. He thought well of blackberry culture for profit. Grape-growing he did not think was progressing in the State, as, so far as his experience went, many more were planted in the Western States, especially in Minnesota and Iowa.

Dr. Houghton thought the profits of fruit-growing often exaggerated to the injury of the interests of fruit-growing, as so many parties were led to expect so much and get so little that, when they failed, their discouragement was heralded in so wide a circle as to deter many attempts that might otherwise have been a success. He had invested, a few years ago, in twenty acres of fruits, as an experiment, but considered himself fortunate, at the outset, by having met a practical gardener, who repressed his enthusiasm; and his expenditures having therefore been judiciously applied, his experience in that business had been encouraging, though not up to the large stories he had read of. He liked to hear of the failures as well as of the successes. It did not do to build up hopes on an exceptional case under exceeding favorable circumstances. As a rule, he doubted whether more than $300 would be the average proceeds of an acre of small fruits.

Mr. R. A. Grider's produce of strawberries at Bethlehem, Pa., was about 3000 quarts from a half acre. Mr. J. B. Gray, of Chester County, saw no reason why 5000 quarts to the acre might not be produced very easily. Mr. Dingee, of West Grove, remarked that, since the packing of strawberries for long distances was now so well understood, the market could not be easily overstocked with strawberries. Mr. J. Baldwin observed that not only the strawberry, but also the gooseberry and raspberry were all profitable fruits for eastern Pennsylvania.

Mr. Grider did not understand how the Pittsburgh cultivators managed to transport their fruit so far and so well. Mr. Heins explained it was by the employment of half-pint boxes, which prevented their being crushed by their own weight.

Dr. Houghton thought the least satisfactory of small fruits to depend on for profit was the hardy

grape. The blackberry was more certain of returns. It took little care in culture, required little knowledge to manage it, was hardy, and always produced a crop that brought fair prices. Mr. Baldwin found Lawton blackberry paid well for good cultivation. Mr. Purple, of Columbia County, found Lawton blackberry do well in limestone land. It did not spoil in sending to market, though some had complained of it. Houghton's seedling gooseberry was one of the most profitable small fruits he grew. Little labor was required in sending them to market, where they brought him from eight to ten cents per quart. Strawberries brought him about twenty-five cents, but, at this difference, thought the gooseberry netted most profit. Mr. Baldwin remarked that, when the market might be glutted with gooseberries, the grower had the chance to turn them into excellent wine. Mr. Casper Hiller had not found the gooseberry perfectly hardy last year. The Houghton variety sometimes mildewed with him.

Mr. Heins thought the raspberry profitable when time and means could be bestowed on its careful culture. He trenched two feet deep; had Brinckle's Orange berries to measure two and a half inches in circumference; thinks they are not profitable in many soils. On a question of variety of raspberry, Dr. Houghton said fall-bearing kinds had not proved profitable. He thought nothing out of its season of usual appearance in market was profitable until the public become habituated to look for it. Fall-bearing raspberries were best when cut down pretty low in spring. Casper Hiller remarked that the expense of gathering and sending to market was so variable that it was difficult to get at a definite idea of general profit.

Mr. Grider did not cut off runners of strawberries, as in the Knox method, but kept the runners from rooting by constantly cultivating the soil. He thought with him there would still be a profit at five cents per quart.

Casper Hiller thought it would not pay him at that price. It cost him one and a half cents per quart for gathering the fruit. He grew the Hovey, McAvoy, and Buist's Prize. Mr. Rutter thought these strawberries unprofitable. Albany seedling paid best with him. Dr. Houghton said Mr. Satterthwaite of Philadelphia paid men $1 50 per day for picking, and found strawberry-growing profitable. He got about eighteen cents per quart for Albany, and about twenty-five cents for Triomphe de Gand. He grew most of the popular varieties, but found these two the best for market purposes. Mr. Rutter, referring to blackberries, said the old Purple Cane and the Doolittle Black Cap were the best to grow for profitable market purposes, as they were so hardy. Referring to profitable market grapes, he thought hardy kinds, though with inferior qualities, better than superior ones whose habits were delicate, tender, and unreliable.

Mr. Grider, of Bethlehem, used to raise native grapes very profitably a few years ago, but drew a melancholy picture of his ill success the past five years. Mr. Baldwin instanced a friend who had raised two hundred and eighty pounds of exotic grapes in a very small space, and who was convinced he could raise grapes more certainly and profitably this way, than native grapes out of doors. Dr. Houghton said he once had enough confidence in native grapes to plant them by the acre. He had them yet, but began to have serious doubts of their value. Mr. Purple said it was a misfortune that the loudest protestations of the immense profits from native grapes did not come from those who had raised the grapes, but from those who had the plants to sell. In describing his grape ills, Mr. Grider spoke of his vines being covered with fungous-like excrescences, filled with insect larvæ like plum knots, which was a new trouble to many members present. He destroyed many of the miller tribe of insects by carrying burning torches through his vineyard at night. If he could raise the grapes through all the risks, he thought they would be profitable to him at ten cents per pound. When he succeeded in raising any, he sent them to New York. The expense of packing, aside of the freight, was one and a half cents per pound. Dr. Houghton thought that farmers who went to market regularly could take grapes with other things, and thus make a small profit; but he feared the man who went with them alone would make a bad speculation. Mr. Grider said when the market fell below a paying point, he made wine with his grapes. Dr. Houghton said the average profits of the Cincinnati wine-growers were but $300 per acre when they had anything of a crop, which was but once in three years. So far as his experience went, he would sooner invest $700 in a vinery, even when such vinery was built in the most strong and substantial way (he proceeded to describe how), than the same amount in native grapes. If he had but a few dollars to spend, and had no choice but to plant a native grape, it would be another question. As a question of profit to the farmer or fruit-grower, he thought well of blackberries. They were easily grown, and their season extended over six weeks.

(To be continued.)

THE
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DEVOTED TO
Horticulture, Arboriculture, Botany & Rural Affairs.

THOMAS MEEHAN, Editor.
W. G. P. BRINCKLOE, Publisher.

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VOL. IV.---NO. 4.

Hints for April.

WINDOW GARDENING.

Window gardening, at the present time, exhibits more prominent traits of progress than any other branch of the art. A few years ago, it was confined to the mere cultivation of a few pots of plants. Now, it gives scope for the application of great taste in arrangement. Balconies, hanging-baskets, cases, &c., afford elements for variety; and in the combinations of one with another, the lady gardener finds material for the execution of many pleasing plans.

We have found, by experience, that plants do much better in wire baskets, with a coating of moss around the inside to keep in the soil, than they do

in boxes or pots. The moss absorbs more moisture than either of the other two articles, and gives it off gradually, correcting the arid atmosphere that is usually the great obstacle to the cultivation of window plants. There is no reason why strong wire frames might not be suspended from the sills of windows lined by moss in this way, and plants set out in the soil; some trained on trellises around the edges; some hanging in negligent beauty over the sides; and others of naturally erect habits posted in judicious places amongst the rest. This can be arranged either inside or outside of a room window. But the best arrangement would be one that could be adapted to hang outside in fine weather, and be taken in during unfavorable times.

The accompanying sketch will show the advantages of this plan over anything that a few pots in the usual way can accomplish.

In selecting soil for these baskets or cases, choose that which is turfy or of somewhat spongy nature, as such soils retain moisture longer, without necessitating artificial watering, which should always be a cherished object in cultivating room plants

FLOWER-GARDEN AND PLEASURE-GROUND.

Prepare ground for planting. Soil loosened two feet deep dries out less in summer than soil one foot deep. Rich soil grows a tree larger in one year than a poor soil will in three. Under-drained soil is cooler in summer than soil not under-drained. The feeding roots of trees come near the surface; therefore plant no deeper than necessary to keep the tree in the soil. If there be danger of its blowing over, stake it, but don't plant deep. One stake set at an angle is as good as two set perpendicular. Straw or mat set round the tree keeps the bark from rubbing. Large stones placed around a transplanted tree are often better than a stake. They keep the soil moist, admit the air, and encourage surface roots. Shorten the shoots at trans-

planting. This induces growth, and growth produces roots; and with new roots your tree is safe for another season. Unpruned trees produce leaves, but little growth, and less new roots.

Place broad-leaved evergreens where they will get no sun in winter, yet away from where the roots of trees will make the ground dry in summer. Deep soil, but shallow planting, is all important for them. In transplanting, take care of the roots. Good roots are of more importance than good "balls." Balls of earth are useful in keeping fibres moist; but don't sacrifice the best fibres five or six feet from the tree for the few fibres in the ball at the base. When roots are rather dry, after filling a portion of soil, pour in water freely. After all has settled away, fill in lightly the balance of the soil, and let it rest for a few days. This is as a remedy, not as a rule; for watering this way cools the soil, ultimately hardens it, and in other respects works to the injury of the transplanted tree.

Unless inside of a round ring, or circular walk, don't plant trees or shrubs in formal clumps. They are abominations in the eyes of persons of taste. Meaningless irregularities form the opposite extreme. Remember, "art is nature better understood."

In your flower-beds, if the plants sickened last year, change the soil. Renovated earth is renewed health to consumptive flowers. Sow annuals as soon as the ground is warm. Too early sowing and deep covering rots seeds very often. This is frequently the cause of one's seeds being "bad." Prepare flowers in their winter quarters for the summer campaign, by gradually inuring them to the air before setting out finally. Set out when all danger of frost is over. Don't set out a plant with a dry ball; but water well while in the pot an hour or so before.

Arranging flowers in beds affords room for a display of taste. Edgings to beds are now common. Amaranthus tricolor was one of the prettiest we saw last year. Perilla nankinensis is a coarse plant when close to the view; but a mass seen from a distance is a beautiful object. Amongst the newer bedding plants, Gazania splendens proves better than we expected.

VEGETABLE GARDEN.

South of Philadelphia, the more tender kinds of garden vegetables may now be sown, beans, corn, cucumbers, squashes, etc., that it is not prudent to plant in this latitude before the first of May; and tomato, egg-plants, etc., may also be set out in those favored places. We notice that several of our friends do not report well of the Fejee tomato. Our own experience has been considerably in its favor; and we think a majority, at least of those who have tried it, think highly of it. Cucumbers, squashes, and such vegetables can be got forward as well as tomatoes, egg-plants, etc., by being sown in a frame or hotbed, and potted off into three-inch pots. They will be nice plants by the first week of May. Rotten wood suits cucumbers and the squash tribe exceedingly well as a manure. Tomatoes and egg-plants that are desired very early are best potted, soon after they come up, into small pots. They can then be turned out into the open air without any check to their roots. Of course, they should be gradually inured to the open air—not suddenly transferred from a warm and moist air to a very dry one.

Bean poles may be planted preparatory to sowing the Lima bean in May. Where bean-poles are scarce, two or three hoop-poles, set into the ground one foot from each other, and tied together at the top, make as good a pole, and perhaps better.

Dwarf beans should not be sown closer together than two inches. The Valentine is still the most popular. A kind called the Early Butter, noticed last year, is valuable from the fact of its having very little "string," even when nearly mature.

Peas should be sown every two weeks to obtain a succession. There are few additions to the old stock amongst the early kinds; but in the later ones there have been some decided improvements. Harrison's Glory, Flack's Victory, and Fairbeard's Champion of England maintain the reputation of last season. Some new Marrowfats that are dwarfish are also improvements, at any rate in that respect, of which Climax, Alliance, and Bedman's Imperial are well spoken of. For those who have good sticks at command, a six-footer, called Leviathan, and one nearly as tall, called General Wyndham, proved good last year.

Lettuce, for a second crop of salad, should be sown about the end of the month. The Drumhead cabbage is usually sown for a summer crop; but the old kinds of Cos lettuce would, no doubt, be found very valuable in rich soils.

Early York Cabbage for early use should be set out early this month. It is an excellent plan to make the holes with a dibble first, where the cabbage is to be set; then fill up the holes with manure-water; and, after the water has soaked away, set in the plants. It is rather more laborious than the old way; but the cabbage grows so fast afterwards that it pays pretty well.

It is not a good plan to cut all the asparagus as soon as they appear. A few sprouts should always be left to grow from each, to strengthen the plants.

Where Brussels Sprouts, Cape Brocoli, and Autumn Cauliflower are desirable, now is the time to sow. They require the same treatment as the general cabbage crop.

FRUIT GARDEN.

We have very few suggestions to add to those made last month. Fruit trees that have proved undesirable from any cause may be re-grafted with more favored kinds. This is an advantage with some varieties; it takes an age, for instance, to get the Seckel Pear into bearing condition from a nursery-raised tree; but, by grafting it on one that has already "arrived at years of discretion," the advantage of placing a young head on old shoulders in this way is soon made manifest.

Buds that were inoculated last fall should not be forgotten; but, as soon as vegetation has pushed forth, the buds should be examined, and all other issues from the old stock taken away. It may also be necessary to make a tie in order to get the young shoot of the bud to go in the way from which you would not have it hereafter depart.

Above all, do not allow the month to pass without posting yourself afresh on the various methods recommended for destroying insects, or preventing their attacks. The advantage of a stitch in time is never more decided than in the great struggle with fruit-destroying insects. A mass of information on these points lies scattered through our past volumes, that will well repay a careful re-perusal for the purpose alone of re-furnishing one's ideas in that line.

Communications.

FRUITS IN IOWA.

BY JAMES MATTHEWS, KNOXVILLE, IOWA.

Having been for some time a subscriber to your valuable paper, and thinking that a few years' experience I have had in Iowa might, if communicated, be of some use to others here, as well to those who contemplate a removal to our fertile valleys and prairies, I embrace a leisure hour of wintry weather to give some items, especially in grape culture, which is just now attracting so much attention here, as well as in other portions of the country.

Having, from some observation and attention to this subject for a few years, formed an opinion that our soil generally contains all the elements for the successful propagation of the vine, I commenced my practical experiments in the spring of 1859. I then planted one vine each of the following varieties, to wit: Concord, Delaware, Franklin, Hartford Prolific, Catawba, Isabella, Clinton, and North America.

This climate being tolerably severe (the thermometer often indicating 20° to 25°, and sometimes, as in the winter of 1855–6, 30° below zero), my first object was to ascertain what kinds would stand our winters without any protection, and therefore answer for general cultivation.

For a fair experiment, the plan suggested itself to my mind of covering a portion of each vine, and leaving the other portion exposed on the open trellis. In this way, I treated all the varieties above named last winter and the preceding one, with the following results: Concord, Delaware, Franklin, Hartford Prolific, Clinton, and North America passed through without any perceptible injury.

Isabella and Catawba both killed to the ground, or nearly so. I may add, too, that last winter the thermometer indicated, on one morning, 28° below zero.

These tests, I think I may safely infer, settle the question as to the hardiness of the kinds named, in this climate; but, from what I shall further state, they do not by any means lead me to the conclusion that covering is unnecessary, or useless, if we wish to insure a good crop as early, and of as large size and quality, as our soil and climate will produce with the best out-door treatment. In regard to the Concord, Franklin, Hartford Prolific, and Clinton, I found that the branches covered during winter ripened about one week earlier, and produced better fruit in all respects than those which remained unprotected. To this, however, the North America proved an exception. With it, I could perceive no difference in time of ripening, size, or quality. The exposed branches not being in the least injured, I would unhesitatingly set it down as the hardiest of the list here given. The Delaware has not yet fruited with me; therefore I can not, from my own observation, say anything, only that it appears to be quite hardy; and for the first two years (being very small when I procured it) the vine made rather a poor growth; but last season it grew finely—from which I would infer that this celebrated kind is hardy—grows slowly at first, but, when once fairly established, will make at least an average growth, as compared with other varieties.

In size, North America, Hartford Prolific, Concord, and Isabella were nearly equal.

Many berries on all these would measure three-fourths of an inch in diameter. On the North America and Hartford Prolific, a few were found which were seven-eighths of an inch in diameter. The vines were all near together, and had the same soil and treatment as nearly as possible. When planted, all were yearling plants, except the Isabella and Catawba, which were two years old.

While speaking of size, I will say that those produced by me were not the maximum productions of this country, as I have seen Isabellas and Concords raised under other treatment, and in pure native Iowa soil, which measured one inch in diameter. I may speak more fully of this some time hereafter.

Hartford Prolific and North America ripened at the same time—middle of September; Concord one week later; Isabella and Catawba the first, and Franklin and Clinton the middle of October. In quantity of fruit per vine, Concord was first, and Hartford Prolific and North America next—the first named having produced the past season (1861) forty-five pounds, and the two latter about thirty-five pounds each.

As to quality, I do not rely much on my own judgment, as I have not had the opportunity of tasting very many kinds; but I think I may safely say that eight out of ten persons who tasted my grapes last year, placed North America first, Catawba perhaps excepted. (They did not, however, ripen together, and therefore there could not be a very fair comparison.) Isabella next, Concord and Hartford Prolific next, and about equal; Franklin next, and Clinton last. Having had no experience in wine-making, I can give no opinion as to the merits or demerits of any of these kinds for that use.

I will add here that, for this western country, and in exposed situations, I think very few grapes, if any, will be found equal to the North America, all things considered. It is a fine grower, as hardy as an oak, and the fruit very handsome.

Mr. O. T. Hobbs, of Randolph, Pennsylvania, of whom I received my vine, raised this kind from seed, and I think is entitled to much credit for his efforts in that direction. I will say, in conclusion, that, since planting the kinds herein referred to, I have procured and added to my list about thirty others of the new natives, and expect to procure about twenty more varieties in the coming spring. Should you think that these trifling experiments "away out West" will be worth anything to your numerous patrons, you may publish the foregoing; but, should you have better matter with which to fill the *Monthly*, no one will peruse its pages with more satisfaction than your subscriber.

CHEMISTRY OF THE GARDEN.

BY WILLIAM BRIGHT, PHILADELPHIA.

That chemistry has been of great service to horticulture, there can be no doubt; but there are some things in relation to the action of the chemical elements upon plants, not yet fully understood, which are very puzzling to persons not well versed in this science. One of these points is the action of ammonia, which is frequently found to be highly useful to plants which show but little nitrogen (or ammonia) in their composition; that is, their growth is greatly promoted by the use of substances containing ammonia; but they do not take it up and embody it in their organization.

A notable instance of this is seen in the case of pear trees, which some American cultivators advise should be liberally supplied every year with well-rotted stable-manure. Mr. Rivers, the eminent English fruit-grower, goes even farther than any of our American writers in recommending strong nitrogenous manures for pear trees. In the tenth edition of his "Miniature Fruit Garden," published by Longman & Co., London, 1861, page 42, Mr. Rivers directs root pruned standard pear trees to be manured as follows: A circular trench or furrow around the tree, he says, he "has had filled. in December and January, with *fresh liquid night-soil*, covered with a coat of burnt earth two inches thick, which has had a most excellent effect."

Again, he says: "In soils of a light, dry nature, the pear or the quince requires careful culture. I therefore recommend the surface around the tree to be covered, during June, July, and August, with short litter, or *manure*, and to give the trees once a week, in dry weather, *a drenching with guano water*, about one pound to ten gallons. Each tree should have ten gallons poured gradually into the soil. By this method, the finest fruit may be produced."

The same advice is given in Rivers' work on the "Orchard House." He says, page 90, London edition: "Pear trees are gross feeders, and [in pots] should have three or four surface dressings of manure during the summer."

Now, the pear tree is by no means a nitrogenous plant, like the cabbage, and shows, in the analysis of its wood and fruit, but a very small proportion of the nitrogenous or ammoniacal compounds. Hence it is evident that the pear tree cannot take up and appropriate, as part of its composition, this

large quantity of ammoniacal manure which Mr. Rivers recommends—night-soil, guano, and stable-manure, all rich in ammonia. We have no doubt that Mr. Rivers is correct in his practice; but what is the philosophy of it? or rather how can we explain this seeming chemical puzzle?

Take also the grape-vine. We know that the vine and its fruit have been grown in great perfection in positive beds of muck, slaughter-house manure, and night-soil, though this is not the best recent practice. The vine, it is true, is a rank-growing plant; but it contains very little nitrogen, or ammonia, either in its wood or fruit, not more, perhaps, than the pear tree, at least in its mature wood. What, then, is the use of all this ammonia as the food of the vine? Why is it necessary to give the vine so much stimulating ammonia?

Again, in all composts and borders for the grape-vine, we are accustomed to use a large quantity of sand or rotten rock (containing silica), and yet the analysis of the vine shows only about one or two per cent. in its ash, scarcely more than the pear tree. Why should we be so careful to supply such an abundance of silica to the vine, when it is not made use of to form a part of the plant? We have no doubt that grape-growers are correct in their practice, and yet we have no doubt that grape-vines and grapes can be grown quite as successfully in simple vegetable mould, without the use of either ammoniacal manures or sand, by the aid of proper inorganic manures alone.

Now, what is the real truth? What is the correct philosophy or chemistry of these seeming contradictions? What is the real action of ammonia in cases where it is not taken up by plants?

In the London *Gardener's Chronicle*, recently, there has been an animated discussion on the subject of manuring evergreens, in which the weight of evidence was decidedly in favor of applying stable-manure and guano to conifers. Now, evergreens are in no respect nitrogenous plants; nor do we know that they take up or make use of ammonia in any form to any considerable extent. Yet the application of ammoniacal compounds imparts to their foliage a more vividly green hue, and manifestly increases their growth and general luxuriance.

The pea, on the contrary, one of the most highly nitrogenous plants we have, rich in ammonia in both its vine and seeds, can be successfully grown on comparatively barren sands by the aid of sulphate of lime, without the use of ammonia, guano, or stable-manure.

Prof. Mapes, who is known to be an intelligent chemist, in an editorial article on manuring fruit trees in the *Working Farmer* for January, 1862, says:—

"Stimulating manures, and those subject to excessive fermentation, such as the manures of the stable, barn-yard, and hog-pen, should never come near fruit trees. They cause an unnatural growth, soft and imperfect in texture, and incapable of standing our changes of climate."

Prof. Mapes is right, and Mr. Rivers is right; that is, either doctrine may be made right in itself, and it may be made wrong by lack of practical skill or scientific knowledge in the application of it.

But what is the amateur or student in pomology to do, in view of these diverse and contradictory statements, in each case made by high authority?

We do not present this subject with the intention of giving, at the present time, our solution of the questions propounded, but for the purpose of inviting a discussion of them, by other writers, in the columns of the *Monthly*.

We call upon "Novice," who is evidently no novice; and "Fox Meadow," who is ever pregnant with good ideas, and ready to be delivered; and all the other choice spirits of the *Monthly's* correspondents, to solve these riddles in the mysterious processes of nature. Prof. Mapes ought also to give us an argument in support of his side of the question, as he stands so condemned by the opposite but successful practice of Mr. Rivers.

Mr. Barry, of Rochester; Hon. M. P. Wilder, of Boston, and T. W. Field, Esq. (author of "Pear Culture"), at Brooklyn, all, we believe, practice the annual manuring of Dwarf Pear trees with stable-manure, containing ammonia, and yet Prof. Mapes says it is positively wrong. Who is correct, and what is the *rationale* of the matter?

When somebody else has spoken, we will give our ideas on the subject. Mr. Paynter, of Philadelphia, is a clever practical operator in the chemistry of manures; let us hear from him.

CALLICARPA PURPUREA.

BY MR. J. W. WOOD, WASHINGTON HEIGHTS, N. Y.

I PERCEIVE, from your remarks on the plant figured in your January number of the *Monthly*—"Callicarpa purpurea"—that you are not aware that it has been in the country for twelve years or more.

Messrs. Hogg & Son, of Yorkville, N. Y., imported it, in 1849, from Lowe for "Deutzia gracilis"! and I think Messrs. Ellwanger & Barry

imported it about the same time. Mr. Hogg was in Rochester in the fall of 1850, saw it, and purchased a plant or two to add to our then small stock of it.

It was not till September, 1851, when I brought the true Deutzia gracilis from England that the error was discovered. After that, we ceased increasing it, not knowing what it was till it produced flowers and berries, when either Dr. Torry, Prof. Gray, or Mr. Breckenridge, I now forget which, happened to be in the nursery, and Mr. Hogg called their attention to it, and they pronounced it "Callicarpa Americana," and that is what they and I have sold it for since. Although I think now it is a misnomer, and am inclined to agree with you in thinking it is the C. purpurea of Jussieu.

Anyhow, it is a good thing. My large plant of it this fall was beautiful. You must not infer from my remarks that it is quite common round New York. It is not so. There is not one gardener out of fifty that knows what it is.

[In fruit, Callicarpa Americana somewhat resembles C. purpurea, but the berries are much paler. When in full growth, however, the two plants are very distinct, the former having large, coarse, almost nettle-like leaves. Any one of the gentlemen named is too good a botanist to mistake so distinct a plant as C. Americana for anything else; and if they pronounced our friend's plant this species, we should be inclined to think they were right, and that he has not the C. purpurea.—Ed.]

THE GAZANIA SPLENDENS.

BY J. M.

The Gazania splendens, the past summer, was, as far as my observation went, a decided success. The plants that were experimented on to test its desirableness for our climate had been cuttings rooted very late in spring, and planted in the latter end of June, from three-inch size pots, in a very wet, clayey border, fully exposed to the sun. The situation and soil suited them admirably, and they grew into compact spreading masses, fifteen inches in diameter, and of a beautiful bright green color; but owing, as I think, to their not being planted out early enough, they did not begin to flower freely until very late in the fall, so late, in fact, that it was necessary to remove them to the greenhouse for winter protection almost immediately.

The coming season, by planting out earlier, and in different situations, I intend to give it a further trial, together with the G. rigens, which was not planted out last summer, but grew and flowered well in a pot. The latter-named plant has yellow flowers, somewhat resembling the former; but its leaves are much cut, whilst the G. splendens has entire leaves.

Have any of your correspondents experimented with either of these plants, and with any success?

ON PROPAGATING AND GROWING CAPE HEATHS—ERICAS.

BY MR. D. BARKER, HARTFORD, CONN.

This beautiful and interesting genus cannot, when seen under a good state of cultivation, fail to attract the attention of all lovers of flowering plants, from the profusion of the flowers which most of the species and varieties produce; and the parts of generation being for the most part so perfect, we need not be surprised at the many beautiful hybrids which, by the care of the skilful hybridist, have been and continue to be produced.

Heaths, like most other plants, are propagated very freely from seed, which, by care, many of the species produce in abundance. Notwithstanding all that we have hitherto seen cultivated in this country have been originated from cuttings, or imported from Europe, there are annual importations of seed from the Cape of Good Hope; but all, without exception, which we have seen raised from such seed have been but of little value.

The time we would advise for sowing the seed is from the first of March until the middle of April; inasmuch as, by sowing at this season, the young plants will become strong and sufficiently established to stand the following winter. The pans for sowing the seed in should be filled to half their depth with broken charcoal, so as to insure good drainage, upon which should be placed a covering of moss to prevent the soil from running down, and preventing the escape of stagnant water. Upon this, and to within one inch of the top, place some very sandy peat, if procurable; if not, equal parts of fine sandy loam, taken from an old bank or pasture meadow, with the sod well decayed; old leaf mold and good clean road or river sand. With the surface made very smooth, upon which the seeds should be thinly and regularly sown, place no covering whatever upon the seeds. This precaution is absolutely necessary, from the circumstances of the seed being very minute and unable to push through any covering deeper than what the necessary waterings will bury them.

The pans should be placed upon a shelf in the coolest part of the greenhouse, and near the glass, being careful to shade whenever the sun's rays fall

upon them. In this situation they should remain until about the first week in May, after which they should be removed to a cool frame under glass, and carefully shaded during the entire summer whenever the sun shines upon them.

From eight to ten weeks after the seeds are sown, the soil in the pans should never be allowed to become dry, but carefully examined every day, and kept just moist, at the end of which time, the seed may be expected to vegetate; but some may remain for three or four weeks longer before vegetating. The pans should therefore be carefully watched for at least three months, after which time all hopes may be given up of any more seed vegetating.

As soon as the seeds commence to vegetate, air must be admitted to prevent the small and delicate plants from damping off. As the plants increase in strength, air should be admitted more freely. As soon as the plants are sufficiently strong to bear handling without injury, they may be transplanted into well-drained pans, about one inch apart, using the same kind of compost as recommended for sowing the seed upon. After being transplanted, they should be very carefully watered with a very fine rose watering-pot, and afterwards placed in a close, well-shaded frame, until they become well established, which, under good care, will be in about three weeks. After this time, they should be placed near the glass, in a cool frame, where they can receive plenty of light and air, being careful to shade them during bright sunshine. In this situation they may remain until the approach of hard frost, when they should be placed upon shelves near the glass, in the coolest part of the greenhouse, and regularly watered whenever they require it, and kept free from damp, *their greatest enemy*, until the following spring, when they should be treated as hereafter recommended for established plants.

(To be continued.)

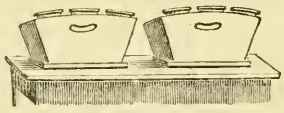
A WINTER GARDEN.

BY MATHIOLA.

Let me describe the management of house plants adopted by a friend who always has her plants in fine condition. It was adopted at my suggestion, and therefore I do not apologise for acquainting your readers with it. She devotes one room of her house to them, sitting among her flowers whenever she pleases, but keeping the temperature as uniform as possible at 50° F. by means of a coal stove with a constant fire in it. It would not be comfortable as a sitting-room for any length of time; and you know it is unhealthy to sleep among plants in a room where the air is confined.

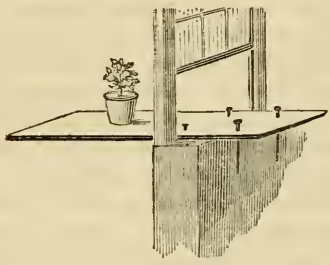
However, in mild weather, when a window can be opened, and the plants set a little away from the draft, the temperature is often allowed to reach a height of 60° or 65°. But persons who are fond of flowers are rarely deterred from devoting a room in their house, having a southern, or southeastern or western aspect, to their special use.

My friend having selected such a room, with two windows, large and ample, facing the south, and two facing the east, prepared a table of painted wood for each window, of the same breadth as the window, and upon these she has set eight boxes, two upon each table, with handles, or rather holes, in the sides near the edge to raise and carry them by. They are eight inches high, and are large enough to contain about eight six-inch pots setting in loosely. Perhaps a dozen might be placed in them, but better not have too many. The boxes, at any rate, are of uniform size; and, after the pots are set in them, the interstices are filled with sand, which serves to keep the roots of the plants moist. The boxes appear thus:—



The edges of the pots rise above the rim of the boxes or not, as the case may be. As often as once a week, if the weather is not below freezing, or even if it is at a temperature of 30°, the plants are put, one or two at a time, out of the window, if the room is up stairs; if it is below, the boxes containing the pots are each carried out of the door, and the plants are syringed with clear rain or soft water—or soapsuds, where there are any signs of the aphides—of a temperature slightly warmer than the atmosphere, say lukewarm. This is the only watering they need, the sand retaining the moisture as it falls from the leaves; and in order to water them with a syringe over the leaves in this way, dispensing with the tedious and injurious practice of sponging or wiping every leaf to remove the dust, &c., my friend uses something like a painter's jack, being simply a plain board, two feet wide and four feet long (she does not require it in the lower room, the plants being carried out of the door in the boxes), with four holes—two for pegs on the inside of the window, and two on the outside; and on this board outside of the window she syringes, one or two at a time, all her plants occasionally; or (though she never does so) a per-

son might slide out the whole box of plants, and syringe them altogether.



Her husband requires no hotbed in the spring, for he generally finds an ample supply of tomato plants, melons, &c., in this green-room of the house, already above the soil in the pots at the time gardeners usually bestir themselves to start their seeds in forcing-beds; and he never has the vexation, which befel myself the last year, to have the growth of two months destroyed by a scorching sun, the glasses having been left upon the frames all day in my absence.

THE TRITOMA UVARIA.

BY J. M.

This we consider one of our handsomest and most indispensable of summer-blooming plants; and, since its introduction in this country a few years ago, it has gained a very general reputation as a good border plant, and has become a great favorite in the gardening world. One of the greatest treats we had last summer was to see a large bed of different plants bordered with it. This bed was almost square, with a carriage road in front, a walk on each side, and a row of large box shrubs at the back, and about four other rows of various plants, as cannas, begonias, gladiolus, &c., ending with the Tritoma uvaria. These were planted about two feet apart, and had grown quite dense together, with two or more spikes of brilliant orange-colored flowers to each root, growing three to four feet high, making a row of unsurpassed beauty, which its wavy, grass-like leaves tended much to improve. We think an improvement on this would have been to have had the back row of hollyhocks, then a row of gladiolus or dahlias, next Canna discolor or Warcewiczii, the latter best, perhaps, on account of its flowering more freely than the former; next a row of tall greenhouse plants; and lastly the Tritomas. Where there is not room for so many rows, we would have the Tritomas at the back, and some smaller-growing plants for the front, with an edging of Iberis sempervirens, or Gazania splendens. Tritoma roots are easily kept in winter, treated exactly as dahlias are, with the exception of an occasional sprinkling with water to keep them moist till spring. The roots are said to be quite hardy; but they have been found to do the best when stored away in a cellar for winter.

CHASSELAS MUSQUÉ GRAPE.

BY MR. R. BUIST, ROSEDALE, NEAR PHILADA.

The foreign grape, Joslyn's St. Albans, or Chasselas Musqué, are the same; bunch, long and tapering; berries, round, transparent, golden yellow when fully ripe, with a slight musk flavor, a very great bearer, and rarely cracks—indeed, has never done so with us. Muscat blanc hatif, or Early White Muscat, are the same; bunch, rather short, with small shoulders; berries, round, transparent white when fully ripe (is two weeks earlier than Joslyn's St. Albans); has a strong Muscat flavor; cracks very frequently when in rich, moist culture, but does not suffer so much in pot culture; is the earliest of our white foreign grapes.

THE CURCULIO.

BY T. M. LYNCH, BEDFORD, PA.

Spring is approaching, and with spring vegetation will make its appearance; bloom and young fruit will appear, as also the much-abused curculio; but thus far he has paid no attention to any abuse that has been hurled at him, save pinching his head, which is an endless job.

Yes, spring is approaching, and with it the curculio. Perhaps what I am going to say may be of some benefit to your numerous readers. I do not know whether my method of prevention is new with all or not; but I have not seen it in print.

My method is, first procure a force-pump. We get them here made of tin for one dollar that will throw a three-eighths stream eighteen feet high. Next procure quicklime; slack as for whitewash, and, when cool, add water until the consistency of thin whitewash, a sufficient quantity for the number of trees to be syringed. A little salt is also beneficial. By placing the vessel among my trees, and the pump in it, I can throw the lime all over six or eight trees. This should be continued until all the tree is limed; and the work is done, until the fruit has grown larger, or washed off by rain, when the dose should be repeated. The syringing should commence as soon as the fruit is perfectly formed, or before the curculio commences its depredations, and kept limed until the fruit is more

than half grown. My trees seldom require more than two applications; and the time required for twelve trees is not over two hours. By this method I have succeeded most admirably. My plum and apricot trees are loaded with fine fruit, whilst others have none. And also might it not prevent the black knot on the plum tree if properly applied? Try it, somebody. We have no black knot here.

ON THE CIRCULATION OF SAP.

BY MR. CHARLES REESE, BALTIMORE, MD.

WHAT is the true theory of the circulation of the sap in exogenous trees and plants?

There is scarcely a subject in the whole range of botanical science upon which there is such a diversity of opinion as upon this. All writers admit that it is of great importance, and yet no two precisely agree in the conclusions drawn from experiments upon it; and, after a patient and careful examination of the best authors, we are left as much in the dark as ever.

The most popular theory of the day, and one which we find advocated by many wise and learned men, is that, at the fall of the leaf, the sap in the branches and trunk of the plant gradually descends to the roots, and lodges there until the return of spring, when, by some unexplained power, it is forced upward, filling all the branches, and causing the leaves to put forth again, and the tree to grow. A majority of men, influenced mainly by impressions received in childhood, and evidently without reflecting much upon the subject, believe this to be the truth, and rest there, without wishing to pursue the subject any further; whilst others, seeing great objections to this theory, have discarded it, and set forth a new one, with this as the main feature, viz.: That all the sap remaining in the tree in the autumn becomes changed into wood, and is thus finally disposed of; consequently, that which rises in the following spring is a new supply. In the "Encyclopedia Britannica"—article Botany, page 111—we find "Walker, Burnett, and others made incisions into the bark and wood of trees in spring and summer, and marked the points where the sap made its appearance. In this way, they endeavored to trace the course of the fluids in the stem. Walker concludes from his experiments *that the spring sap begins to flow at the root*, that it ascends slowly upwards, and bleeds successively as it ascends to the very extremity of the tree."

On the other hand, in "Carpenter's Vegetable Physiology," page 148, we have: "If a vine be growing on the outside of a hothouse, and a single shoot be trained within, in the midst of winter, the warmth to which the latter is exposed will cause its buds to swell and unfold themselves; whilst those on the outside are quite inactive. A demand for fluid will thus be occasioned along this particular branch; and this will be supplied by that existing in the vessels below. When these are emptied, they will be again supplied by the parts below them; and thus the motion will be propagated to that division of the roots whose fibres are connected with those of the vegetating branch. These will absorb fluid for its support, whilst all the rest are completely at rest. In the spring of the year, when the cheerful rays of the sun call the whole of the buds into activity, the whole of the roots are similarly affected; *and that the sap begins to move in the upper branches before it commences ascending in the trunk* has been shown by experiment—notches having been cut at intervals, by which the period of its flow could be ascertained in each part."

When doctors disagree, &c, &c. Here we have testimony precisely opposite. Of course, both are right in their own estimation.

In the hope of finding the truth amongst the intelligent contributors who adorn your pages, I have been induced to make the inquiry at the head of this article. Will you give it a spare corner, and let us hear from them on the subject?

My attention was first called to it by witnessing the operation of striking cuttings of the vine, cut from the parent stem long after the sap had all "descended to the roots," or had been "changed into wood." As soon as the sun poured his flood of golden light upon them, and the little brown buds felt his genial warmth, they began to swell and give signs of a new life. In a short time, a thin clear fluid began to trickle down their sides, and form a rim around the base of each, from which, in a few days more, a dozen white rootlets peeped forth, and pushed down into the earth, as if to bring up hidden treasures; and almost immediately the buds broke and came out into full leaf. Here was a new revelation to me, and I began to question my new teachers:—

Whence had you this power? Your life was drawn from you last fall, and you have no great reservoir at your base, with powerful engines to send the crystal fluid through your veins at the approach of spring, and yet you grow almost as well as if still attached to the parent vine. Calling to mind the words of the poet about "sermons in stones, and books in the running brooks," &c., I sat down to reflect awhile. Surely, said I,

here is food for thought. The fall of an apple led Sir Isaac Newton to the discovery of the laws of gravitation; and why may not as simple a physiological fact as the striking of a cutting lead to the true theory of the circulation of the sap?

From the teachings of the wisest and best man the world has ever known, I have been led to perceive that all things in the material world are the effects of spiritual causes. Wherever there is a germ of life, or an organization receptive of life, there is into that, through the medium of the light and heat of the outward sun, an influx from the Creator, a constant effort to bring forth all things good and beautiful; and the more I investigate, the more clearly I perceive this truth, that in all the works of Infinite Wisdom there are certain generals, composed of particulars, in each of which, although they may be the smallest into which microscopical science has yet been able to divide them, there are a thousand particulars, each as full and perfect in its character as the first. How true this is, every department of the vegetable kingdom testifies. But most clearly of all it is exemplified in the vine, that beautiful symbol of divine truth. In each little rootlet, every tiny seed, and in each delicate bud, there is a germ, which, under certain circumstances, will produce a full and perfect vine. Now, it appears to me this could not be the case, unless there was, besides the general circulation of the sap in the whole plant, a particular circulation in each of these parts belonging to it individually, and acting independently, although forming a part of the whole general circulation. In each of these separate individual circulations or systems dwells all the fulness of the vine. Each power, function, property, and characteristic of the parent is there; and if, by some catastrophe, the entire vine, with the exception of one single bud, should be destroyed, from that a vine in every respect identical with the other could be raised.

The strawberry plant is another beautiful illustration of this principle. In the bud which slowly creeps out of the bosom of the parent, and grows until its own weight bends the long and slender stem to the earth, is the delicate frame-work of a new life. As soon as the eager rootlets establish a telegraphic communication with the soil, the new system is complete. The placenta is severed, and a new creation stands before us. But why multiply instances familiar to all. If this principle of separate circulation in the different parts is established, will it not lead us to a truer knowledge of the general system?

Now, I do not pretend to say that I have made one step in advance towards the attainment of that object; nor do I think I ever shall; but what I have to say may set others to thinking, and in the end the truth may be evolved.

All plants, whether good and useful, or noxious and hurtful, are in the constant effort to reproduce their species, and, as this is their legitimate business in life, every faculty is directed to that object. Every bud, within which is the germ of a new life, is an especial object of maternal care and solicitude. Safely lodged at the base of the petiole, and securely wrapped in its tiny cradle, it is rocked to sleep by the gentle breezes, and fed every morning with the sparkling dewdrop. The purest and best portions of the elaborated sap, fresh from the laboratory of the leaf, is devoted to it, invigorating and strengthening every part, and each day adding just what is needed for its support.

At the close of the year, the change in the color, and finally the fall of the leaf, announces that its task has been completed; the organization of the new life is full and perfect, and the happy parent goes to her rest to prepare for new offspring with the new year.

Here is the corner-stone and key to the whole superstructure. Every bud so formed becomes the centre of a new system, and, whether cut from the parent stem and planted alone, or conjoined to another vine, or left where it originally grew, has within itself the capacity to grow and impart to its offspring every peculiarity of form and color which characterised the parent vine. Now, let us inquire, If the sap is "all changed into wood" at the fall of the leaf, or is "evaporated," or "descends to the roots," what is this mysterious substance upon which the light and heat of the sun in spring has such an influence?

I have not been able to satisfy my mind fully upon this point; but, so far as my experiments have gone, they have furnished me with conclusive proof that the sap does not descend to the roots in the autumn, in greater quantities than it does during the growing season; but, on the contrary, as soon as the fall of the leaf indicates that the new buds are perfected, the general circulation of the plant becomes more and more obstructed by congregations of albumen, starch, sugar, &c., in the alburnum and cellular tissues of the medullary rays, the spiral canals in the medullary sheath, and pith of the newly formed wood, and finally becomes *congealed* by the action of frost, so as to appear entirely motionless. This takes place first in the extremities, then in the lower parts of the branches, and sometimes throughout the trunk, when the

plant may be said to pass into a state corresponding to that which plants of another kind find so necessary once in every twenty-four hours. During this period, cut a vine where you please, and you can not make it part with its sap. The duration of this sleep varies, of course, with different plants; with some, not more than one month elapses before they are awakened; with others, two, three, six months, regulated by the degrees of cold to which they are subjected, and the peculiar nature of the plant.

Now, as I have repeatedly observed—and I find my experiments confirmed by Carpenter and others—as the sap in the young and tender stems on the extremities was the first to become congealed and solid (if I may use the term) in the autumn, so it was the first to become liquified and active again in the spring. Now commences what I have called the particular circulation in each of the buds or new systems. The warm rays of the sun, acting upon the cellular tissue of the young bark around the bud, dissolve the congealed fluids, and they pass downwards, enter the medullary rays to the spiral vessels in the medullary sheath, through which they ascend, and flow outwards through the medullary rays again to the bark, thus forming a complete circle. Whilst this is going on, the congealed mass in the alburnum also feels the influence of the sun's rays, and, becoming liquified, presses upon the thickened mass in the cells next below them, and they in their turn upon those adjoining them, and so on until a communication is opened with the roots, when instantly a new actor steps upon the stage, a stranger whom the schoolmen call *Endosmose*. The entire upper cells of the plant being now filled to repletion with thick gummy matter, the general circulation goes on very slowly at first, until, by means of this new agent, the delicate walls of the root-cells are opened, and, in a thousand streams, the rains and melted snows of the past winter, holding in solution the mineral ingredients necessary for the support of the plant, rush into the alburnum, converting starch into sugar, tempering, absorbing, and dispersing the obstructions in the sap-cells, and producing all over the plant that abundant flow which has no doubt given birth to the theory of the "ascent of the sap from the roots." Sometimes this goes on for weeks and months before the opening of the leaf and flower-buds.

I have known these fluids to be circulating freely in a grape-vine in February, and yet the leaves and blossoms not unfold before May. Well, now, suppose there was no descent of sap through the cellular tissues of the bark to the roots, no deposit of cambium on the exterior of the alburnum, what amount of sap, think you, would rise in two months at the ordinary speed of ascension? Why, more than the whole vine would contain if it were composed entirely of sap.

It is during this period that new roots are formed very rapidly. The separation and distribution of the albuminous and starchy matters, caused by the endosmotic entrance of new fluids from the fruitful earth, furnish abundant material for these; and the delicate fibres now push out in great numbers, and preparations go on throughout the whole plant for the new work before it.

This is the reason why late fall or early spring planting of fruit trees is more successful than summer planting. As soon as the leaves appear, the whole energies of the plant are directed as before—first to the young and tender buds, next to the formation of new wood and roots, and lastly to the development of the luscious fruits. The circulation of the sap now goes on regularly and orderly, the general system supplying from its inexhaustible fountains a generous support to a thousand particular systems till the close of the season.

Now, sir, there may be errors here mixed up with some truth. To me, at least, it appears to be truth; but, as we cannot trust to appearances, I wish to have it tried in the great crucible of practice, by careful experiment.

[We regard this paper as a valuable contribution to the science of vegetable physiology. Many of the observations confirm those made by the German botanist Schleiden some years ago; and we have ourselves thought it remarkable that a better theory of the circulation of the sap, the formation of wood, &c., has never been framed than now is laid down in our best botanical works.

Yet we think some of the deductions in the latter part of the paper not well taken; but we suspend any further remark for the present in the hope that others who have made original observations, or paid close attention to the subject, will compare our correspondent's views with their own.—Ed.]

DOUBLE TUBEROSE.

BY ANDREW BRIDGEMAN, NEW YORK.

It is a question often asked, "Why is it that the tuberose does not always bloom? or what makes the prospect of their blooming so uncertain?"

In order to solve the difficulty, it will be necessary to inquire into the habit and nature of the plant. We find that, while most bulbs and tubers

have a growing season, and a season of ripening and rest, the tuberose may be kept growing, the proper temperature existing, all the year, and started at any season, and brought into bloom.

Take, for instance, one hundred perfect bulbs, varying in size from one-half to one and one-half inches in diameter, and plant them out early in the spring. In the beginning of September, the largest roots will commence flowering, followed by

Fig. 1.

others in a less advanced state of progress. Of the one hundred planted with the sizes graduated as before mentioned, but twenty to thirty could be expected to perfect their flowers in the ordinary growing season before the frost would cut them off.

Now, then, with this sudden check upon the growth of all alike, it becomes us to examine into the condition of the bulbs when taken up, and determine their value for future flowering. The twenty or thirty that bloomed are easily distinguished, and may be set aside as useless for flowering the next season. There are say ten or more where the flower-stalk has pushed from the bulb, and are there arrested in a partial state of development. These also will not flower again. The next class—and these are generally the most numerous—are those in which the flower-germ has started from its base within the bulb, but has not reached the exterior of the bulb so as to be seen. In drying the bulbs, these germs also dry up, and destroy them for flowering again. It is these and the last named that occasion so much disappointment to purchasers. The remainder of those planted being about one-fourth of the whole number will make good flowering bulbs for the following season.

We thus find that, had the season been longer, more of them would have bloomed; and, if a climate like that of the month of September could be perpetuated, all would have perfected their flowers, and been followed successively by the largest of the offsets; but, having been arrested during their

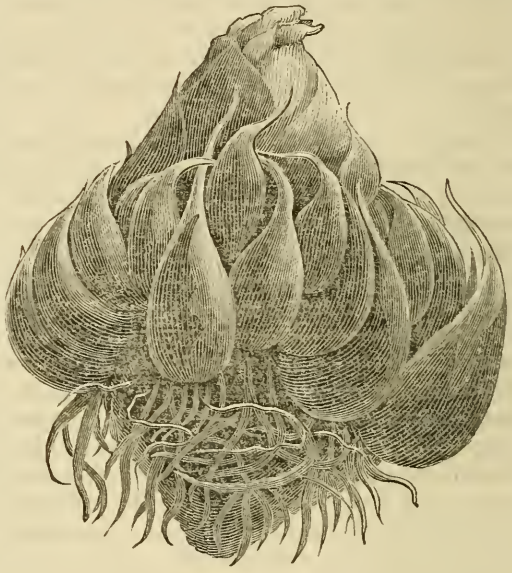


Fig 2.

several stages of progress, the major portion are rendered useless for future flowering.

My method of growing the tuberose is as follows: In the month of March, the bulbs are placed upright, and partially imbedded in soil under the greenhouse staging. This will not make them root, but has a tendency to hasten the process when planted out. About the first of May, they are planted in the open ground, with the top of the bulb two inches below the surface of the soil. About the beginning of October, all those that show the flowers, but are not sufficiently advanced to bloom before the fifteenth of the month, are taken up carefully with a good ball of earth, and placed in pots, or transplanted to a bed in the greenhouse. The remainder are left in the ground until after the frost has destroyed the tops, then dug up, and the earth shaken from them without bruising, and taken into the house. We next go over them, and cut the tops moderately short, and place the bulbs close together, and in an upright position upon the greenhouse staging, where they will gradually dry. In the course of two or three weeks thereafter, the tops are again cut closer; and, after shaking the earth entirely from them, the roots are trimmed close, and put away in a dry situation free from frost.

The advantages of drying them gradually, and in an upright position, is, that while the moisture surrounding the bulbs is not sufficient to cause the flowers to germinate within the bulb, it has a tendency to reveal the presence of the flower after it has formed, and cause it to appear in sight. By carefully examining each bulb during the second trimming, the greater portion of the defective bulbs may be discovered; and, if any should escape notice, they may be detected afterwards. When perfectly dry, the ends of the outer covering or flakes of the bulbs are soft as tissue-paper; and within that, in a perfect bulb, the centre will be green; in an imperfect one, a dry, hard core may be felt; and if it be the flower-stalk, it can be drawn from the bulb.

I have this season treated my tuberoses in this manner, and must say, as far as the immediate advantage is concerned, it is a losing business, as I find there is not much more than half the number of bulbs to sell that there would have been had I exercised less inquisitiveness into the cause of tuberoses not blooming.

[Mr. Bridgeman sends us specimens to illustrate those which will flower, and those which will not, one of each we have figured. Fig. 1, characterised by a tapering apex and few offsets, is the flowering bulb. Fig. 2, by a thick, blunt apex and numerous offsets, will not flower. A little practice will render the process of discrimination easy.

On behalf of our lady readers particularly, to whom the tuberose is almost one "of the necessaries of life," we tender Mr. Bridgeman our best thanks for his valuable communication.—Ed.]

TERMINATIONS OF BOTANICAL NAMES.

BY DR. ASA GRAY, CAMBRIDGE, MASS.

Some of your horticultural friends differ about the proper orthography of personal specific names of plants. One class insists that such specific names, in the genitive case, should always end in *ii*; others that they should always end in a single *i*. Here—as usual between disputants who make too broad, general assertions—both are wrong. A third class intuitively perceives that both forms may be correct, each in its proper place, but are puzzled to know which is right in a particular instance.

Now, there are plenty of cases where the termination in *ii* is right, and where the single *i* would be unendurable; there are many cases where it is nearly indifferent which is adopted; and there are plenty which call for only the single *i*.

The difference here in the genitive depends upon the nominative of the Latinized name. Names Latinized in *ius* of course make *ii* in the genitive—the case in which they commonly occur as specific names. Those terminating in *us* make *i* in the genitive. Whether an unclassical or barbarous name should be written with *us* or *ius* as its termination depends simply upon considerations of euphony. No doubt there are rules which would govern almost every instance that occurs; and I could wish that some one of your contributors of a philological turn would take up this subject, and also give brief and plain directions respecting the *pronunciation* of botanical names generally. All I can pretend here to do is barely to respond to your special inquiry, by citing a few instances: 1st. Which require the two vowels. 2d. In which one or two vowels may be indifferently used; and 3d. In which there should be only a single terminal vowel. The familiar names of *Smith*, *Jones*, and *Robinson* will nearly serve to illustrate the three cases.

1st. The name of the plant which commemorates its discoverer, *Smith* (Latinicé *Smithius*) must needs be written *Smithii*. Here *Smithi* would be unendurable. So, also—to take names connected with the botany of this country—*Kalm*, *Michaux*, *Pursh*, *Douglas*, &c., inevitably make *Kalmii*, *Michauxii*, *Purshii*, *Douglasii*, and names terminating in a vowel, such as *De Candolle* will necessary make *De Candollii*.

2. As to *Jones*, there is little choice between *Jonesii* or *Jonesi*, although I should rather prefer the former; and so of *Drummond*. The custom among botanists is about equally divided between *Drummondii* and *Drummondi*. I should be in equal doubt whether *Darlingtonii* or *Darlingtoni* were preferable.

3. But a plant named for *Robinson*, however, would undoubtedly be written *Robinsoni;* one for *Clayton*, *Claytoni;* for *Richard*, *Richardi;* for *Hooker*, *Hookeri;* for *Walter*, *Walteri;* for *Fraser*, *Fraseri;* for *Solander*, *Solandri*, &c.

I dare say competent philologists could give you rules applicable to all these cases, and to them I must refer you if you desire to go to the bottom of the question.

ROOT-GRAFTING ROSES.

BY MR. T. M. HUNTER, LANCASTER, OHIO.

I have been engaged for several weeks in grafting roses on the Manetti root; and the singular success I have met with has induced me to give you a description of my plan.

I have the roots taken up, and packed in wet sand, and set away in the greenhouse for two weeks

before using them. When grafting, I never take but one root from the sand at a time.

The size of the scion must be exactly that of the root. Cut the scion lengthwise with a sharp knife, making a slit about one inch long; cut a similar slit on the root; place them together, and tie with cotton thread. I then place the grafts in my propagating bed, burying them almost entirely in the sand, only leaving one bud exposed. If the grafts are properly managed, none will fail.

I have now three hundred of the finest varieties of H. P. roses, that were grafted one month since. All are growing luxuriantly. Some have new wood six inches long, with bloom-buds formed. After they have become firmly united, small roots will be formed around the union of the graft and scion. I cut the root entirely off at the lower point of the scion, and then pot in four-inch pots. I like this process of propagating better than that from cuttings. The plants, as a general thing, grow faster, and bloom better.

[It will be new to many of our readers, though not to a few of the more practised ones. Notes like this, useful to the majority, are always welcome.—Ed.]

MANAGEMENT OF THE GOOSEBERRY.

BY MR. J. W. ZINK, GOVANSTOWN, MD.

In the February number of your excellent magazine, in the monthly remarks on the "Fruit Garden," it is stated that pruning ruins the gooseberry. During the season of 1860, I sent to the Baltimore markets twenty-five bushels, and in 1861 nearly thirty bushels, for which I averaged from three to five dollars per bushel, the most part of which was sold green for pies and tarts. About five bushels I left to ripen, which were very fine. I have some few varieties of the English gooseberry, which do not mildew. My patch consists principally of the Cluster and some Houghtons. In part of my patch, the bushes are between eight and nine years old. They are very vigorous and productive. The other portion are about five years old, producing last year as fine a crop as I ever saw. In the spring of 1860, I planted out another bed of gooseberry plants; and in 1862 they bore a fair crop of fruit. My plants are planted in rows four and a half feet one way, and four the other (but this I find is too close). I cultivate them one way with a horse, and then hoe thoroughly.

And now I must say something with regard to pruning. I must say that mine are thoroughly pruned every year. I trim my gooseberry bushes any time during the months of January and February, cutting away anything in the shape of a sucker, and a portion of last year's growth. The ground that I have occupied with gooseberries is about one-eighth of an acre. My gooseberries are always fine, clear, and perfectly free from mildew. In passing through the markets, I can see at a glance which are my gooseberries, and which are not. Often would a country farmer come along, and ask, "What makes your gooseberries so superior to mine?" Says I, "Do you prune and work your bushes?" "No." "Well, that is the cause."

A near neighbor of mine has some of the same variety as I have. They are standing along the borders, surrounded with grass. They are unproductive, small, and scarcely worth picking.

ADDITIONAL NOTES ON THE HISTORY OF THE VINE.

BY MR. J. M. M'MINN, WILLIAMSPORT, PA.

Your last number contained a history of the vine from the *London Gardener's Weekly*, which was highly interesting; but it does not correspond exactly with some other accounts published. The following French version I met with in an old work, and I send it to you for publication:—

[From "Spectacle de la Nature," 1755.]

"We may, without the least heresy, believe that the vine is as old almost as the world itself. Noah was industrious to communicate to mankind the best discoveries he had made before the deluge. With this view, he began the renovation of agriculture; and, as he devoted his first care to the planting of the vine and extraction of its juice, we may reasonably suppose that his motive to this proceeding was the *certainty* he had of its usefulness. The accident of intoxication is no proof that he was unacquainted with the qualities of the grape, and we can only infer from it that its impressions were more potent upon him after a long continuance of its use.

"But, however that fact may be, the propagation of the vine was gradually extended from land to land by his descendants, and we find that one of the principal parts of the external worship practised by most nations, even in remotest ages, consisted in offering a tribute of *bread* and *wine* to the Deity as an act of adoration. This was the usual oblation; and, when the blood of any victim was shed, that sacrifice was always accompanied with a handful of meal or cake,* and likewise a libation of wine.

* Mola was a barley cake, placed on the head of the victim; hence the verb *immolate*, to sacrifice, is derived.

"We have frequently heard pretended philosophers and unjust lawgivers, such as Pantheus, Domitian, and Mohammed, who have endeavored to deprive mankind of a benefit afforded them by the *Creator*, though he was not unconscious that it would be subjected to some abuse. Those persons, therefore, are most extravagantly partial to themselves when they effect to be wiser than their Maker, to eradicate the vine which he has planted for the solace of our labors.

"This plant was transmitted from Asia to Europe. The Phœnicians were early navigators, especially along the Mediterranean coast, carried it to most of the isles, as well as to the continent. It succeeded to admiration on the isles of the Archipelago, and was afterwards planted in Greece and Italy. Pliny was persuaded that the prohibition of Romulus and Numa, to honor the dead by pouring wine on the tomb, made it evident that vines were very scarce in Italy at that time. As the Gauls, who had tested the liquor, formed a resolution to establish themselves in a country that produced it, and sent wine to all adjacent parts, the Alps was insufficient to check their progress. They extended their conquests along the shores of the Po, when they applied themselves to the cultivation of the fig—the olive and the vine in particular.

"The inhabitants of Marseilles and Narbonne had some vines when Gaul was conquered by Julius Cæsar; but the progress of their cultivation was prohibited by Domitian. The Gauls, as well as Britons and Spaniards, were not permitted to plant them till the reign of that excellent Emperor Probus (A. D. 282). He was sensible the promotion of agriculture ought to be inseparable from a good government, and that the reign of a prince can never be propitious unless he is sedulous to procure plenty and tranquillity to the people of whom he is constituted father.

"The planting of vineyards in Britain, in the northern part of the Celtic provinces, was attended with insurmountable difficulty on the part of nature, and the inhabitants of those countries, and even the Celtic Gaul continued to extract their usual drink from barley, for want of sufficient growth of the vine.

'Unthriving vines compelled the Celtic swains
To force a liquor from the bearded grains.'

But they were at last planted by degrees in all countries when there was any plausibility of success. St. Martin planted one in Louraine before the close of the fourth century. St. Remi, who lived in the latter end of the fifth and the beginning of the sixth century, left to several churches, by his will, the vineyard he possessed in the territory of Rheims and Laon. From that time, the vine began to be propagated through all France, and probably invited the Franks into Gaul, as they had already engaged the Gauls to settle in Italy. The other German nations, who had no conquests to pursue, endeavored to open a tract of land in the Black Forest, and to plant the vine along the banks of the Rhine."

Will some of your correspondents prepare an account of the Spring Mills vineyard, planted by Peter Legaux, and give the result of the vines planted from the Cape of Good Hope?

DECORATING FLOWER-GARDENS.

BY WALTER ELDER.

THE plants for ornamenting and diversifying pleasure-grounds and gardens, next to trees and shrubbery, and requiring but little care and culture after being planted in soil properly prepared for them, are perennial herbaceous plants, of stately growth, profuse and beautiful blooms. William R. Prince has given your readers such a masterly account and choice list of Pæonia, in your January number, that I think many would be pleased if Robert Buist or other nurserymen would give a descriptive list of other fine genera.

Dielytra, of two species, of early bloom and great beauty, grow upon all soils, in sunshine or shade; perfectly hardy, and rapidly increases. The flowers are pink and rosy crimson, produced upon long pedunceles, and, as they hang, far surpass in beauty and brilliancy strings of the finest jewelry.

The Phlox has been so wonderfully improved in its varieties within the past ten years as to far surpass the fondest anticipations—the most ambitious desire. Those who have only seen the old varieties would be both bewildered and delighted to see the grandeur and beauty of the blooms with which the new varieties are crowned. Their colors are pure white, pale and deep pink, cherry red, rose, carmine, crimson, and striped. Messrs. Buist & Son have fifty distinct kinds in their new catalogue, growing from two to three feet tall, and bloom five months in the year. They thrive in almost any soil; perfectly hardy, but do best with a thin covering of leaves, litter, or manure in the winter, and they increase so rapidly that in three years each plant can be divided and made three of. We see in many nurserymen's catalogues that they are offered at $2 50 per dozen.

Delphiniums or Larkspurs—the new varieties

are also great improvements upon the old, growing from thirty to fifty inches tall. The flowers are pure white, and white clouded with blue, and blue, from azure blue to indigo blue, all very bright and glittering like the most shining metals. They too are quite hardy, and increase so that they can be divided every three years, and each plant make three good ones. Better spread manure over them in winter.

Aconitum, or Monk's Hood, has also had many highly improved varieties added to the old, of great merit. They much resemble the Delphinium in appearance in the distance, although very different when close by. Like the Larkspur, their colors prevail in blue; but now we have white and variegated blooms; thrive either in open or half-shaded situations; treat them as Larkspurs. But the chief cause of success in all these is a proper preparation of the soil before planting them; turn up the soil deep, and put a good quantity of rotted manure in it, and keep free of weeds afterwards. A good thing is good with culture; but bad culture or neglect will cause both animal and vegetable to degenerate; and yet a good thing needs no more care than a poor one.

The above, with the Pæonia, will keep up a bloom from April till October; and, to prolong the beauty of the grounds till December, we must have the Chrysanthemum, which, for a late autumnal bloomer, has no equal, either for out-of-door or pot culture. There are two distinct races of it—the tall or old sorts, and the dwarf or Lilliputian kinds called "Pompones." The great perfection to which the new varieties of both sorts have been brought is almost beyond description. The great sizes, doubleness, and numbers of blooms surpass all former imagination. One must see them to be convinced. The diversity of colors and shining glitter of the flowers, when compared with the old sorts, are like the most glossy silk to the plainest cotton prints. They are perfectly dazzling.

It is but eighteen months ago when James Eadie, gardener to Dr. James Rush, of Philadelphia, took to the exhibition of the "Pennsylvania Horticultural Society," held in Philadelphia, a dozen plants of the Chrysanthemum, in large flower-pots, and each had over five hundred double and finely expanded blooms on. The colors are white, lilac, pink, rose, red, carmine, brown, orange, lemon, yellow of all shades, crimson of all shades, and some nearly black. There is, perhaps, no genus of plants that give such a variety of colors as the Chrysanthemums.

The Hollyhock has also been highly enriched with new varieties, of various colors. There is as much difference in the old sorts and the new kinds as there is between an empty shell and a full one. The flowers are as double as the fullest rose, and as large as roses. The flower-stalks, while the blooms are full out, are among the richest-looking things in the vegetable kingdom—white, yellow, of shades orange, red, scarlet, crimson, and nearly black. They keep longest in bloom in half shaded situations.

The Hollyhock, properly speaking, is a biennial; but, by picking off the blooms as they fade, and cutting off the stalks at the bottom when the bloom is over, the plants will last several years. They need no protection in winter.

Any or all of the above genera are highly ornamental, either in clumps, by themselves, or transpersed in the shrubbery, and, when planted in rows on the borders of kitchen garden beds, and alternated with annuals, have an elegant effect, and enliven the gloominess of the garden. There is no dying out or failures attend any of them. April is the best month to plant them. Put them in the ground, and they will grow without further care.

[Mr. Elder has the excellent quality of saying much in little space in the communications he gives us; and we take occasion to commend their usual practical good sense to the consideration of our readers.—Ed.]

GRAFTING MULBERRIES.

BY K., NEWTON, MASS.

I noticed, in reply to your correspondent's inquiry in regard to the best mode of propagating the Downing mulberry, that you advised "whip-grafting." Some years since, I recollect reading an article by Mr. Longworth, of Cincinnati, published in the *Horticulturist*, upon the propagation of many species of plants that succeeded better by budding in *spring* than grafting, in which he stated that, out of thirty mulberry grafts set by him, *not one grew;* but buds set by him seldom if ever failed.

In accordance with his suggestion, in the spring of 1860, as soon as the bark pealed readily, I tried a single bud which made on a small stock a growth of six feet, which satisfied me that this mode was preferable to grafting, and would suggest a trial of it to your correspondent.

PRINCE'S MAGNATE STRAWBERRY.

BY R., TOWANDA.

In the August number of your journal, I notice, in the report of the committee of the Horticultural Society on strawberries, they state the qualities of different varieties. Among others, they notice the "Scarlet Magnate," and call it "a plant often of weak growth." With all due deference to the opinion of the Committee, I beg leave to say that the experience of those who have tried this variety in this region of Pennsylvania is just the reverse of that stated in the report. I have grown it for several years, having obtained the plants from Messrs. W. R. Prince & Co. in the autumn of 1858, and have found it a vigorous and strong grower and a good bearer. I have set out from the first planted bed a good many times, and always with success. I have also supplied the variety, with others, to my neighbors, and always with the same result.

The fruit is large, and of a fine flavor. I have picked berries from my plat four and one-half and four and three-quarters inches in circumference.

We find the plant, by experience, to be a hardy one; and the best evidence of it is that it successfully stands our winters, which are very severe in this valley (the upper Susquehanna). The Early Scarlet will not endure their severity; but the Scarlet Magnate does, and does it well.

After an experience of four years, I take great pleasure in recommending it, especially to amateurs like myself.

THE CHINESE YAM.

BY W. MUIR, MELROSE, ST. LOUIS CO., MO.

I know nothing experimentally of the Dioscorea *Japonica;* but, after a trial of six years of the D. *batatas*, I conceive of it most highly.

The excellence of the root as an article of diet is confessed by all who have used it. The rapidity with which it can be propagated, the simplicity of its culture, its absolute indestructibility by the frosts of winter or the heat and drought of summer, the certainty with which want or famine can be avoided by simply permitting it to remain from year to year in the ground, and still always gaining in size, the fact that it is perfectly hardy, and needs no precautions in the way of storing—an objection with both the sweet potato and common or Irish potato—all combine to give it a character that will not be acknowledged by the mass of mankind till *gaunt famine stalks throughout the land.* My experience also goes to show that its growth will do much in the way of deepening and ameliorating stiff, unproductive soils. The only objection to its general culture is the labor of digging; but that can be obviated by forethought; and this *very supposed fault* is that which gives it such pre-eminence over other roots; and I still think that the time will come when "he who introduced this plant to our country will be hailed as one of its greatest benefactors."

I cannot state much more about it, but beg to remark that, by one of those singular anomalies that botanic annals occasionally record, I last year obtained some seeds, which I will carefully plant next year. It was a three-winged seed.

[In the performance of our editorial duties, it is often our misfortune to have to express ourselves against the views and positions of Mr. Prince. We therefore the more cheerfully take the present occasion to say that Mr. Prince has never had justice done him in the matter of this introduction. It was pronounced an "arrant humbug;" and Mr. Prince got his share of the odor. We have maintained, and still maintain, that the Dioscorea has positive merits, which will insure it increasing popularity as they become better known.—Ed.]

MANAGEMENT OF DWARF ALMOND.

BY K., NEWTON, MASS.

In connection with a part of your introductory article in your March number, giving directions for pruning shrubs and climbing-roses, please allow the writer to state the plan which he has successfully pursued in flowering the double-flowering almond, which, when properly managed, is one of the most beautiful shrubs, but, as it is usually grown, is an unsightly plant. The extremities of most of the previous growth almost invariably being partially killed, the plant becomes unsightly producing but few straggling flowers. To insure success, the whole plant should be annually cut down to the ground as soon as the flowers have lost their beauty. This will induce a strong growth of new shoots, many of which should be stopped, leaving a few of the strongest, from which to get a magnificent show of flowers.

Precisely the same treatment is pursued with the prairie roses, and the shoots which on strong plants will grow to the height of twelve or fifteen feet, when trained to a pole present a far neater appearance than when, according to the common mode, the old wood is allowed to remain on the plant.

The Gardener's Monthly.

PHILADELPHIA, APRIL 1, 1862.

☞ All Communications for the Editor should be addressed, "Thomas Meehan, Germantown, Philadelphia," and Business Letters directed to "W. G. P. Brincklor, Box 406 Philadelphia."

☞ Persons sending two new Subscribers for 1862 in addition to their own, with $3.00, can receive a copy of our First Volume, (1859) free. All persons who have paid their subscriptions for 1862, by sending two new Subscribers and $2.00, can receive a copy of the same.

BACK NUMBERS.

Should any of our readers have duplicate numbers of January and May, 1860, we shall take it as an especial favor to receive them, and will replace them by any others they may wish, and will send a beautiful colored plate of the Maxatawney Grape for one, or Harris' "Rural Register" for two of either of those numbers.

MISSING NUMBERS.

We have received numerous complaints the past three or four months, that copies fail to reach our subscribers. They are, of course, duly sent from this office; and the failure rests entirely with the mails. We are not bound to replace them; but, while the number was confined to a few copies, we have cheerfully made them good. But the loss is becoming very heavy; and we hope that our friends will use their best endeavors to trace their missing numbers through the proper post-office authorities. When they fail to get them, after all their efforts, we will still continue to replace them as heretofore.

HISTORY OF OUR FRONTISPIECES.

We may say to our readers that, from their first inception to the present time, the Editor has steadily opposed the introduction of frontispieces into this journal. To his understanding, they seemed entirely out of place. A frontispiece at the beginning of a *volume* looks well, and has an idea. It is the beautifying of an entrance to a work that we are thus pleasantly invited to enter.

A frontispiece is well when legitimately used as a piece for the front; but, to have twelve pieces for the front, and one only getting to the front, gives to a volume a polygonical character that does not harmonize with any view of propriety the Editor entertains.

He has been always averse to any exterior means, commonly known as "clap-trap," to gain a popularity for the work. It was his aim to make the magazine eminently practical, and to render everything subservient to this, even popularity itself. Hence he would introduce illustrations *only* when they served the practical purpose of *illustrating the text.* If, for the price of our subscription, which does little more than cover the cost of paper and printing, all the cuts the Editor would like to introduce into the body of the work could be afforded in *addition* to what has been called the "frontispiece," he would make no objection; but, when his wishes for more illustrative cuts in the body of the work have been met with the publisher's unanswerable argument, "Can't afford it. Fifty or one hundred dollars per month on the frontispiece is as much as we can stand"—he has had no more compunction in wishing these fancy pictures sacrificed than he had pleasure in their original adoption.

He is happy now to say that the publisher at length coincides with his views. Mere pictures will be hereafter abandoned, and the money they would cost spent in illustrations for the body of the work, tending still more to heighten that truly practical character which it has been the Editor's constant pride his work should attain.

ON THE PROPER TREATMENT OF WEEPING TREES.

It has often been a subject for discussion in horticultural circles why trees with remarkably pendant habits are called "weeping" trees; and some writer has sarcastically declared it is on account of their usual miserable and forlorn appearance, as seen when grafted "standard high," exciting tears of pity in the beholder.

The real origin of the term doubtless extends back to the time of the old Arabian legends, and was used in connection with the oldest "weeping" tree on record, the Babylonian, or common weeping willow. They say that this tree sprang from the tears of David, and the manner is thus recorded: "After David had married Bathsheba, he was one day playing on his harp in his private chamber, when he found two strangers opposite to him, though he had given strict orders that no one should intrude upon his privacy. These strangers were angels, who made him convict himself of his crime, nearly in the same manner as it is related in Holy Writ. David then recognized in the strangers the angels of the Lord, and was sensible of the heniousness of his offence. Forthwith he threw

himself upon the floor, and shed bitter tears of repentance. There he lay for forty days and forty nights upon his face, weeping and trembling before the judgment of the Lord. As many tears of repentance as the whole human race have shed, and will shed, on account of their sins, from the time of David till the Judgment Day, so many did David weep in these forty days, all the while moaning forth psalms of repentance. The tears from his eyes formed two streams, which ran from the closet into the ante-room, and thence into the garden. Where they sank into the ground, there sprang up two trees, the weeping willow and the frankincense tree. The first weeps and mourns, and the second is incessantly shedding big tears, in memory of the sincere repentance of King David."

With this veracious account of the origin of weeping trees before us, it is certain that we need not feel it a duty to add to their melancholy interest by torturing them into the painful shapes so often seen. They have taken on themselves the duty of weeping for us; and we may as well train them so that their singular beauty should shine out upon us through their tears.

Why it should be necessary to graft a weeping variety of any tree on a long pole, we could never see, unless for the single purpose of forming an arbor by means of the spreading branches. Occasionally some interesting garden ornaments are formed in this way, particularly by the weeping ash. But in the great majority of cases where we plant weeping trees, such an object is never contemplated.

In our first volume, one of the handsomest illustrations that adorned its pages was a new weeping Norway spruce, grown by Mr. Wales, of Dorchester. How would it have looked had it not been on its original stem, but grafted "standard high" in the usual way? Yet this is done every day with plants of the same habit and character, for no reason at all that we can see. Let any one go into a choice collection of plants, and ask for the weeping yew, and he will be shown the abortions of beauty we are now condemning; and then let him contrast it with the following sketch by Carrière of one recently on exhibition at Paris, and choose which he would rather have.

Beautiful as is Messrs. Ellwanger & Barry's Kilmarnock weeping willow, recently figured in our journal, plants treated as the above represents would be considerably handsomer; and, when we consider that it requires no greater skill to produce them in this form, may we not hope to see the attempt?

To raise them, it will only be necessary to graft them close to the ground; or, in some instances,

strike them from cuttings. The strongest shoot should be trained up as a leader. If no signs of becoming bushy naturally appear, the leading shoot should be pinched back occasionally to induce the bushy habit, and the strongest again selected as they grow to form the new leader. The only objection likely to be made is that the leader would be crooked; but this would not be in skillful hands.

Evergreens are now frequently cut down to make them thick at their base; but the shoots selected afterwards as leaders are so treated that, in a few years, it is nearly impossible to detect any appearance of their earlier stopping.

NEW AND VALUABLE SUGGESTIONS IN PEACH-GROWING.

In some parts of our great country, peaches can be raised with greatest ease and a very small amount of professional skill. For cultivators thus favored, we have nothing in this present chapter to offer. But there are numberless persons beyond the circle of these favorites of fortune who cannot raise a peach fit to eat outside of an orchard-house, and who are prepared to employ any reasonable amount of worry, toil, or trouble, could they be sure of satisfactory results. For these excellent men we speak.

Dr. J. S. Houghton, at the recent meeting at Lancaster, dropped a hint which he expressly stated he had not tried, but which, reasoning from known facts, he thought might be successful. There were many causes of failure, he said. One was that an over luxuriance produced unripened, sappy wood, which, by March, became very susceptible of injury by hard frosts at night, and successive bright suns by day, and resulted in permanent injury in many ways, that we are scarcely as yet prepared to believe. In this view, we cordially agree with him.

To obviate this, he proposed to make dwarf peaches by skillful summer pruning, now well understood by readers of the *Gardener's Monthly*, through frequent articles on this subject; and these dwarf trees he proposed to dig up carefully in the fall, insert a piece of salt-sack under each small ball to keep the soil together, and stow these plants carefully in a cellar, side by side, until the warm spring showers should arrive.

There is, we think, great value in the suggestion. The first year, the trees would come up with a few long, forky roots, that would have to be cut back in order to produce a mass of fibres, without which we doubt whether the plant would be able to sustain sufficient vigor to set their fruit. But, after this first year's operation, we think there would be a mass of roots so thick that the soil could scarcely be got out of them at all. Such annually lifted trees would not be difficult to take up. A couple of men could no doubt take up a hundred easily in a day.

But we think the Doctor's idea can be improved on. We know that in Russia they raise apples by planting the trees in such a leaning posture that they can be buried entirely by the soil. Early in spring, the branches are raised out, and no injury to the buds result. In the case of the peach itself, in Minnesota we are informed the same practice successfully prevails. Why not modify the Doctor's idea so as not to require a cellar, but to carefully lift the trees, pack them in ridges similar to those employed in preserving vegetables, and as we illustrated in our article on Celery last year—covering the whole plants entirely with soil, and in the spring plant out as in his plan?

The skill required in summer pruning is not of the highest order, and the labor of taking up, protecting, and replanting not formidable; while the evils insured against are certainly avoided. Trees managed thus would not grow large, and could be planted eight or ten feet apart, and, if only a peck of peaches per tree were the result, would be a prize to the grower. The only point necessary to test practically is, will the trees bear freely and certainly after such annual removals?

Who will be the first to report to us the experiment?

Scraps and Queries.

☞Communications for this department must reach the Editor on or before the 10th of the month.

☞The Editor cannot answer letters for this department privately.

Termination of Personal Specific Names.—In answer to a correspondent recently, we explained that, whether a personal specific name ended in *i* or *ii*, depended on the views of the author of the name. On referring to Lindley, from whence our earlier botanical studies commenced, we found that we misapprehended his rules. So far as the adjective termination—ana, anus, anum, when the plant is named as a compliment to one not connected with the discovery of it, *Smithianum*, for instance—it is correct; but the employment of the single or double *i* depends altogether on the laws of euphony. On conversation with some distinguished botanical friends, we found that none of

them agreed in the application of these laws. So we engaged Dr. Asa Gray, the highest botanical authority we have, in the service of our readers, and have the pleasure of publishing his views in another column.

If this matter can be reduced to rule, we should be very glad of the explanation, and heartily second the invitation of Dr. Gray to our philological friends, to communicate their views on the subject.

Apples of the Dead Sea.—"*A Subscriber*"—which one we are not informed—asks:—

"I have often had my curiosity excited about this fruit. Is its seeming like ashes, when tasted, owing to climate? Would it improve by importation to this country and climate? What is its real name? and is it difficult to introduce here for the experiment?"

Now, we have a strong suspicion that this "subscriber" is "poking fun" at us; but we decide to treat it as in good faith.

In the first place, the story is but a fable, and unworthy of much thought outside of Eastern poetry. Those savans who prefer to treat the fable as a fact have fixed on the *Solanum Sodomæum* as the plant, the fruit of which, they say, when made a nidus for the larvæ of an insect that frequently attacks it, becomes dry and powdery. But the fruit that we have seen of this plant is no more attractive to the eye or the palate than a potato ball, and would not excite much regret though it did "turn to ashes on the lips." Others think it a kind of plum; but this class is a small one.

It is generally useless discussing what is meant by the fruits of romancing travellers. Scientific men seldom agree on their identity in any case. Even the Lotus of the Egyptians, so generally referred to Nelumbium, is considered by Sprengel and other distinguished botanists to be a *Jujube*, or species of Ziziphus, and others again a Celtis. It is like asking what is the "Forget-me-not" of American gardeners. Every city nearly has its distinct plant so distinguished.

To Flower Hoya Carnosa—"*A Subscriber*," *Westboro'*, asks:—

"1. How the Hoya carnosa should be treated to make it flower.

"2. Also the name of a plant of which I send you a sample.

"3. The Daphne odora, is it a slow-growing plant? and how should it be treated?

"4. Will the Fabiana do well and flower in a room where there is a coal fire?"

[Your plant is probably stunted. Turn it out of its pot into a warm and rich border. Next fall, repot it carefully, and the following season plunge pot and all in the border, when it will flower freely.

2. Oxalis flava.

3. Rather slow. The secret of growing it well is never to expose it to hot sun, nor ever let the soil get dry or very wet. In summer, plunge the pot under the shade of a tree, and water when likely to get very dry—perhaps about once a week.

4. It does as well as most plants. It is liable to get naked below, under any treatment. It does best pruned-in rather closely each spring, repotted as soon as it shoots a little into new soil, but in the same size pot (about five or six inches, for room culture), and then plunged in the open border for the summer. Through the next winter or spring, it will bloom beautifully from its last year's growth, and may be cut back and grown the next spring as the season previous.

We could detect no trace of insects in the scil sent.]

Roses and Begonias—*J. P. V., Philadelphia*, writes:—

"1. How and when roses (the more common varieties) can be best propagated?

"2. The soil for propagating the above?

"3. If begonias have been in moderate-sized pots all winter, when ought they to be shifted into larger ones?"

[1. After the wood is quite mature, and just before the fall of the leaf—here, about October—make cuttings about three or four eyes (two or three inches in length), at bottom cut just below, at top just above an eye, and insert about one-third their length in the soil; then water lightly. Through winter, they must be kept where the frost will not get at them, where the soil will not get very wet, nor the air get very warm or dry. As soon in the spring as the buds burst and show signs of growth, the temperature must be gradually increased for them. By this simple process, roses of any kind grow easily.

2. Two-thirds sand, and one-third loam. Use shallow pans or boxes for the cuttings.

3. Different kinds grow at different seasons. The rule is to repot just after they show signs of starting into a new growth.]

Names of Plants—*H. A. T., Crescent City, Iowa.*—No. 3 is Palafoxia Hookeriana. 4. Proba-

bly Polanisia graveolens; there are not stem leaves enough to determine certainly—if not this, it is Polanisia tenuifolia.

We have neglected to say before that the plant sent some months ago was Bartonia Nuda, of Nuttall, not Bartonia alba, as we see it advertised in our journal. Sorry we overlooked it at the time specimen was sent.

Forcing-Pit—*A. C., Reading, Mass.*, writes:—

"I have a fine dry location on the south side of a hill for a forcing-pit, one hundred and fifteen feet long. I had thought to build it five or six feet under ground, and twelve feet wide, with a three-feet walk in the centre.

"1. Is it advisable to dig so deep?

"2. Will wooden tanks answer for heating a house of this dimension?

"3. Will it require more than one boiler?

"4. What capacity of boiler—in gallons or cubic feet?

"5. Where best to locate boiler—at one end, or centre of the house?

"6. What dimension will be required for the tanks—width and depth?

"7. Should they be covered, or made open at the top?

"8. How constructed to return water to boiler?

"9. Can the hot air from the furnace be used to any good purpose?

"10. Will concrete answer for the walls of said building?

"11. Can you refer me to any publication which will give me reliable instruction upon this subject?

"12. Will an enterprise of this description be profitable if well attended to?"

[1. *Forcing*-pits do not do well beneath the surface. Sunk houses of any kind are only fit for store pits for common bedding plants. Forcing-pits want all the direct rays of sunlight. Side sashes are therefore wanted, which cannot be had in sunk pits.

2. Yes.

3. No.

4. If properly set, so as to have all the advantage of the draft of the surface, a couple of gallons or so.

5. Makes little difference. Consult convenience in the arrangement of the house.

6. Makes no difference how wide. If the walk is four feet, the four feet on each side may be all tank, if desirable; or it may be only on one side. All you have to remember is that the more water you have to heat, the more coal you will want, and the larger must be your furnace. This is of more importance than the size of your boiler or tank. Two inches of water is depth enough.

7. Cover with one-half inch boards.

8. Divide it through the middle nearly the whole length, and connect one division with the flow, and the other with the return pipe of boiler.

9. Certainly; the tank will be insufficient without it.

10. Don't like it. Use stone or brick.

11. Volume III. of the *Gardener's Monthly*, page 101. If anything further is required, get Leuchars on "Hothouses."

12. We can seldom advise on questions of profit—they depend on so many local contingencies. As a rule, any business thoroughly understood, and pursued with judgment, is profitable.]

Grapes for Cold Grapery—*B. A., Rock Spring, Pa.*, writes:—

"I am considering the propriety of building a cold grapery. Will you please name in your next number the six best varieties of native, as well as of foreign grapes, adapted to the latitude of 41°, but at an elevation of several hundred feet above tide, which renders the temperature at least 10° lower than that of Philadelphia?

"Would you advise the foreign to be grown in preference to the native at the locality named?"

[No one thinks of planting native grapes in a cold vinery. If we wanted to plant a small cold vinery of twelve vines, we should take three White Frontignac, six Black Hamburg, three West St. Peters. In the open air, some of the hardier kinds of native grapes would do well with you. If you would try a dozen, take three Delaware, three Hartford Prolific, and six Concord.]

Tapping the Sugar Maple—*J. C. D., Poughkeepsie, N. Y.*, asks:—

"How should the sugar maple be tapped so as to preserve the trees, or do the least injury to them, and at the same time procure the greatest amount of sap?

"The information I desire may have been given heretofore in the *Gardener's Monthly;* but, as we are constantly getting something new, and your paper is the fountain for the very kind of suggestions in all these matters, it has escaped my notice."

[The smaller the hole, and the shallower the depth into the trunk, the less the permanent injury. For a tree eighteen inches in diameter, we

would advise half-inch auger holes, and two inches deep. Some go deeper and wider; but probably but very little more sap is obtained. However, after the wood is once reached, the depth of the hole is not of as much consequence as the width. Every eighth of an inch tells injuriously, and little more sap comes from a wide hole than a narrow one. Some, however, use two-inch holes.

Recipe for Glazing Muslin—*Frame, Plymouth, Mass.*, says:—

"I think you have stated in your columns the process by which cotton cloth is rendered impervious to water, so that it may be used for coverings to frames and hotbeds. Will you be kind enough to reprint it?"

[In our Northern and Middle States, where the cold is severe and the snows heavy, nothing can be successfully substituted for glass as a covering for frames and pits; but in the Southern States, where but slight protection is required, a frame covered with glazed muslin will be found very useful. The following is the recipe for preparing it: Materials, three pints of pale linseed oil, one ounce of sugar of lead, four ounces of pale or white rosin, the sugar of lead to be ground in a small portion of the oil, and then put into the remainder of the oil; the rosin then to be added, gently warmed, and stirred till thoroughly mixed. The muslin is then to be stretched and tacked tightly over a frame, and the mixture laid on with a large brush. The muslin should be rather thin bleached shirting.]

Kyanizing—"*A Subscriber*," *Philadelphia*, writes:—

"What is meant by '*kyanizing*' the ends of posts? and is it as effective as tarring or charring them?"

[Steeping wood in corrosive sublimate, or some other metallic salt, is called "kyanizing." Its purpose is to render wood *incombustible*. We have not known of its employment against decay in posts; but, as decay is but a form of combustion, it might do. Its *expense*, however, awards our preference to charring.]

The Winter.—From reports with which friends have favored us from many parts of the Union, we gather that this has been one of the most favorable winters on vegetation for many years past. The thermometer has been about as low as usual; but the moist and snowy weather has checked evaporation, and preserved many half-hardy plants and fruits that would else have passed away from us.

Books, Catalogues, &c.

Silliman's American Journal of Science and Arts, for March.

This number contains an interesting Physiographical sketch of the Rocky Mountain range, at the head waters of Clear Creek, by Dr. C. C. Parry. The mountain range here is 12,000 feet above the level of the sea, and, with the exception of the Appalachian Mountain range, is the most Alpine on the American continent, and may fairly be called the American Switzerland. Dr. Parry says:—

"Within the past few years, the discovery of gold deposits in this portion of the mountain range has attracted thither an adventurous and enterprising population, settling with wonderful celerity its picturesque valleys, and introducing into its wild recesses many of the arts and comforts of civilized life. These various social movements have afforded facilities for the prosecution of researches in natural history which were not enjoyed by the early pioneer explorers of this region.

"In order to improve this opportunity, the writer was induced to make a journey to this region during the past season (1861), with the especial object of studying its alpine vegetation, and making collections of its native plants. With this view, a station was selected near the foot of the dividing ridge, at the head waters of South Clear Creek. From this point, an extensive scope of alpine exposure was brought within the range of an ordinary day's journey. Here, among the pine-wooded slopes on both sides of the Snowy Range, coursing along its alpine brooks, clambering over its precipitous rocks, floundering through snow-drifts, and mounting to its irregular crests and high alpine peaks, was spent most of the summer months of 1861. The scientific results of the observations here made are presented in the following brief sketch and the accompanying list of plants."

After describing his first impressions and general character of the scenery, he points out, as only a naturalist can, the peculiarities that enchanted him in his progress.

"The smaller tributaries, which collect the waters that trickle from alpine snows, ebb and flow with the diurnal changes of temperature, increasing in volume as the sun ascends to relax the icy bonds of a protracted winter, and again contracting as the clear night once more asserts the reign of perpetual

frost. These alpine brooks constitute one of the most attractive features of Rocky Mountain scenery, and along their borders grow some of the finest plants of this region. Their course is that of a continuous *torrent*, presenting in their rapid descent a perpetual sheet of foam, rivalling in whiteness the snows in which they have their sources. Their waters, of crystal purity and delicious coolness, glisten in the deep shade of overhanging pines, and moisten with their spray such choice plants as *Mertensia Sibirica*, *Cardamine cordifolia*, *Saxifraga æstivalis*, and a most elegant and conspicuous *Primula*, near *P. nivalis*.

"In mounting up the steep ridges which border their course, to reach their alpine sources, the view of the surrounding country is entirely shut in by the heavy growth of pines, including, on the higher ridges and abrupt slopes, *Pinus contorta*, with its slender, tapering trunk and stiff, scanty foliage; while, on more level spots, or occupying depressed basins, forming sub-alpine marshes, *Abies alba* and *Abies balsamea* shoot up their tapering spires. The usual undergrowth in these pine woods is composed of *Vaccinium myrtillus*, *Shepherdia argentea*, *Berberis aquifolium*, *Pachystima Myrsinites*, &c.

"In moist, springy places, and along the borders of marshes, we find *Gaultheria Myrsinites*, *Pedicularis surrecta*, *Senecio triangularis*, *Mitella pentandra*, *Habenaria dilatata*, *Pyrola rotundifolia*, var. *uliginosa*, &c. As a rarity, in scattered localities, we here meet with the charming *Calypso borealis*.

"On approaching the limits of arborescent growth, indicated at first by a stunted appearance of the common varieties of pine, as well as the more frequent occurrence of the alpine species, *Pinus flexilis*, we at length come somewhat abruptly upon open stretches, characterized by their peculiar vegetation and general aspect as truly alpine. Some few trees straggle for a variable distance up the abrupt rocky slopes; but in these situations they plainly exhibit the severity of the exposure by deformed and blasted trunks, often nearly prostrate, and showing, by a uniform bending of their upper branches, the direction of prevailing fierce winds, and the weight of wintry snows. These Arctic forms are confined almost exclusively to a single species of pine, heretofore undescribed (*Pinus aristata*, Engelm.), belonging to the same group as *Pinus flexilis*, James.

"Beyond this, there is a succession of alpine exposures, characterized by extensive patches of snow scattered irregularly over the mountain slopes, generally indicating the accumulation of drifts; being most abundant and persistent in recesses near the higher elevations. At other points, a rough *talus* of rocks is spread over the surface, the separate blocks being of every conceivable shape, and loosely aggregated, forming numerous fissures. In these burrowing recesses, the Siberian squirrel finds a congenial abode, and salutes the traveller with his reiterated bark, often the only animate sound to break the solitude of these alpine deserts."

The plants enumerated are mostly named by Dr. Gray, and embrace one hundred species of the usual alpine cast, such as Delphiniums, Saxafraga, Aquilegia, Ranunculus, Draba, Anemone, &c.

The other articles in the *Journal* include a "History of Conchology in the United States," "Physics and Hydraulics of the Mississippi River," "Families, Genera, and Species of the Fossil Coal Plants of the United States," Geographical Notices, &c.

Transactions of the New York State Agricultural Society, with an Abstract of the County Agricultural Societies. Vol. xx. 1860. From the Secretary, Mr. B. P. Johnson.

This is not only a very handsome, but a very valuable volume, and does honor to the Society that issues it, and the officers charged with its preparation and publication. One of the most valuable portions is the sixth annual report on the Noxious and other Insects of the State of New York, by Dr. Asa Fitch, which occupies one hundred and twenty pages, and is handsomely illustrated.

Proceedings of the Academy of Natural Sciences, Philadelphia, for December, 1861.

This work is on our table, and is one of the most extensive monthly numbers ever issued, describing hundreds of new plants, birds, fishes, reptiles, shells, &c., showing that, in spite of the maxim of the great sage, there are yet innumerable things "new under the sun," and that the zeal of the members in pursuit of science is in no degree lessened by our late national calamities.

The following extract from page 525 will interest many of our readers:—

"At a meeting of the Academy, held March 5th, Dr. Stewardson called the attention of the members to the subject of the recent introduction of the Ailanthus silkworm into France, and its probable adaptation to our own country. Having been much interested in the short notices which he had met with in the French journals, he mentioned the subject to his friend, G. Roberts Smith, of this city, who kindly obtained for him from Paris a case containing specimens of this new silkworm (Bombyx cynthia), of its cocoon, and of the silk obtained

from them, in the several states of crude silk, thread, and woven cloth. These specimens were exhibited for the inspection of the members. In the month of June, through the kindness of the same gentleman, eggs of this Bombyx were received from Paris. The first lot entirely failed, most of the eggs having hatched before reaching their destination. From a second importation, which arrived a few days subsequently, Mr. Evans, an intelligent manufacturer in the neighborhood of Philadelphia, who warmly interested himself in Dr. Stewardson's views of introducing the cultivation of this silk in our country, succeeded in raising a few worms, which formed their cocoons in July. Towards the middle of August, the butterflies made their appearance, and the eggs laid by them hatched their worms from the 30th of August to the 3d of September. A part of these worms were placed by Mr. Evans upon a copse of Ailanthus in the neighborhood of his house. Another portion were placed by Dr. Stewardson upon a large Ailanthus tree in a private garden in Philadelphia. The remainder were fed by Dr. Stewardson in a room at his own house. Those placed in the open air were exposed to violent rains and winds, but without injury. Nearly all those placed upon the tree in the city came to maturity, and spun their cocoons, about eighty in number. Of those placed in the open air by Mr. Evans, many were destroyed by birds; but in other respects the success was perfect. About forty cocoons were obtained by Dr. Stewardson from the worms raised at his house. A specimen of one of the latter, feeding upon the leaf of the Ailanthus, and on the eve of forming its cocoon, was exhibited to the members of the Academy by Dr. Stewardson, at their meeting, held October 1st, at which time he gave a short history of his experiments and their results.

"The Ailanthus silkworm, brought from China to Turin in 1857, was introduced into France by M. Guérin-Méneville, in 1858, and already the results of its cultivation have been so encouraging, that but little doubt is now entertained that the production of this silk will soon become an extensive branch of industry in that country.

"From a statement recently made to the French Academy by M. Guérin-Méneville, it appears that the cocoons, which at first had to be carded, have been successfully unwound, but by what process he does not mention. This last discovery adds most materially to the value of this silk; and the ease with which the Ailanthus can be cultivated upon the poorest soils, together with the comparatively small amount of labor required in raising the worms, which, when a few days old, are placed upon hedges in the open air, and require scarcely any further attention, render this culture particularly worthy of attention in this country. The experiments of Dr. Stewardson convince him that our climate is well adapted to raising this worm, and that in this latitude two crops can be obtained in a season. Having succeeded in raising upwards of one hundred cocoons, he hopes, with the assistance of any gentlemen who may feel an interest in the subject, during the coming season, to continue the experiments upon this interesting subject on a more extensive scale."

Catalogues.

Peter Henderson, Jersey City. Roses, Dahlias, and Bedding plants.

James Sheppard, New York. Horticultural Miscellanies.

John W. Adams, Portland, Maine. Hardy Evergreens.

C. B. Murray, Foster's Crossings, Ohio. Sweet Potato man.

Andrew Bridgeman, Broadway, New York. Gladiolus.

Daniel Brinckerhoff, Fishkill Landing, N. Y. Bedding and House plants.

Nealley Brothers & Bock, Burlington, Iowa. Supplement.

D. M. Dewey, Rochester, New York. Colored plates.

Sullivan Bates & Co., Bellingham, Massachusetts. Cranberries.

Pfeiffer & Blackburne, Cincinnati, Ohio. Fruit and Ornamental.

Edgar Saunders, Chicago, Illinois. Bedding plants.

The publisher asks us to offer the following firms his thanks for a short reference of their readers to the *Gardener's Monthly* for any additional current information on horticultural topics beyond what their excellent catalogues afford, which we cheerfully do:—

James A. Bruce & Co., Hamilton, Canada West. Seeds of all kinds, spring bulbs, fruits, &c. Forty-five closely printed pages.

Barnes & Washburne, Harrison Square, Massachusetts. Flower and vegetable seeds. Particular attention bestowed on new varieties. Fifty pages.

Haines & Hacker, Cheltenham, Montgomery County, Pa. Fruit and ornamental trees, shrubs, vines, &c. Thirty pages.

New or Rare Plants.

New American Trees.—In the January number of the "Proceedings of the Philadelphia Academy of Natural Sciences," Mr. S. B. Buckley contributes a paper on some new trees discovered during his Southern explorations the past few years. In prefacing his remarks on the ashes, he says the figure of the green ash (*Fraxinus viridis*), in Michaux's Sylva, has been supposed a mistake for the common American ash; but his investigation shows Michaux right. The true *F. Americana* is often confounded with it. This seems not so common as is supposed. "It grows along the Schuylkill and Delaware, near Boston, and extends along the Mississippi to Louisiana.

The red ash (*Fraxinus pubescens*) is, he says, difficult to distinguish from the white by casual observers; but the red ash seed is shorter and more pointed, and the leaf stalk is often grooved, and the leaves more downy than the white ash. "It grows in the Southern States, and extends west to Minnesota."

Fraxinus epiptera of Michaux is the same thing as F. Americana.

Fraxinus juglandifolia and *F. Berlandieri* of De Candolle are the same as the green ash (*F. viridis*).

The following four are new species, discovered by Mr. Buckley. We omit the scientific descriptions, which will interest but the pure botanical student, and give only Mr. Buckley's popular descriptions and history of them, which will be sufficient for our readers to distinguish them, and lead, we hope, to their introduction in our choice collections of ornamental trees.

"*F. albicans* (Buckley).—It is found from New England to Texas, being the largest of the American ash trees, sometimes attaining a diameter of between four and five feet. Its bark is furrowed, and of a light gray; hence it is called the white ash in many places. Its petioles are grooved, and its buds are destitute of the red velvety pubescence peculiar to F. Americana. I have not seen it in the vicinity of Philadelphia; nor is there any specimen of it collected in this neighborhood in the herbarium of the Academy. In the herbarium of Darlington, at West Chester, I saw specimens of it labelled F. Americana, and it is probably thus called by other American botanists. The West Chester collection had no specimens of F. Americana or F. pubescens.

"Both F. Americana and F. albicans being called white ash throughout the country have caused them to be confounded, especially where, as is often the case, they do not both grow in the same locality; but the fruit of the latter is only about half the size of the former, which, with the other distinctions enumerated, show that they are very different species."

"*F. oblongocarpa* (Buckley).—A small tree, thirty or forty feet high, growing along water courses from Pennsylvania to Texas; its young branches and the footstalks of the leaves covered with a velvety pubescence. Fruit 18 lines to 2 inches in length, and 2—3 lines wide, the terete part short in proportion, and somewhat winged; leaflets 3—4 inches long. This is the Fraxinus pubescens described in Darlington's Flora Cestrica, but not of Michaux. It differs from F. pubescens in its terete petioles. Its leaves are of a deeper green beneath; and both its leaves and branches are less pubescent when mature. Its samara are longer, and nearly one-third less in width; nor are they mucronate, or as sharp pointed as in F. pubescens.

"*F. nigrescens* (Buckley).—This is a common tree in the vicinity of Austin and in Middle Texas, along water courses. It is generally small, but is sometimes 2—3 feet in diameter, 6—7 in length, and 40—60 feet high. The bark of the stem and limbs is dark gray and furrowed; hence, in many parts of the State it is called the "black ash." Its leaves are of a deep glossy green above, and a paler green beneath, and in young leaves the midrib and veins are sparingly pubescent. The terminal leaflet is often much the largest, being sometimes 4—5 inches in diameter. Such specimens I obtained in Navarro County, and also on Caney River in Matagorda County. Its leaves are rarely if ever serrated. The samara are 12—15 lines long, and 4—5 lines broad in the widest part. About one-half of the entire length is broadly winged, from whence the wings are gradually narrowed to the terete part. In midsummer, the top of the fruit, extending nearly down half of the wings, is often curved. The common petiole is channelled above near its junction with the stem."

"*F. tri-alata* (Buckley).—A shrub or small tree, 15—20 feet high, growing on the banks of the Atacosa River in Western Texas. Samara in loose axillary or terminal panicles, about one-half of them 3-winged, and 2—3 lines broad in the widest portion; not terete below; the wings being attenuated as far as the pedicels; leaflets 12—18 lines long, and 6—12 broad, branches smooth, and of a light gray color."

In speaking of *F. pauciflora* of Nuttall, Mr. Buckley says Dr. Chapman is in error in considering it (see his recent "Flora of the Southern States") the same as *F. platycarpa*.

Morus microphylla (Buckley).—This new mulberry Mr. Buckley found in Western Texas, growing in clumps. He says of it:—

"Stems and branches smooth, with a light gray bark; fruit ripe last of May; black and sour, with little juice, and deep sinuses between the achenia, which are little compressed; styles divaricate and obtuse; leaves generally entire, and 1—1½ inches in length, and 1—1½ inches wide; the lobed leaves are about 2½ inches long, the middle lobe prolonged and acuminate. The preceding characteristics are constant; and no person seeing this mulberry in its native situations would call it a form of Morus rubra."

Anæctochilus Bulleni.—A fine species, attaining a height of six to nine inches, with leaves two to two and a half inches in length; ground color bronzy green, marked through the entire length with three broad distinct coppery red, varying at times to golden, stripes.

Anæctochilus Nevilleana.—A lovely species. Leaves marked with orange blotches on a dark velvety ground. In some of the specimens, the markings are of a beautiful white, in the way of Sonerila margaritacea.

Anæctochilus Ruckeri.—The leaves broadly ovate; ground color bronzy green, with six rows of distinct spots running the entire length of the leaves.

Saponaria Calabrica alba, Pure White.—This beautiful new annual is of very dwarf habit, and, being pure white, contrasts most admirably with the Saponaria calabrica rosea. It produces blossoms in great profusion, and remains in flower during the whole summer and late in autumn. It is invaluable for beds, or as edgings for borders.

Lapageria rosea.—Speaking of plants seen at Kew, a correspondent of the *Gardener's Chronicle* says: "Foremost among these was the glorious Lapageria rosea, which, although in a cold fernhouse, with a northeast exposure, had a dozen or more fully expanded flowers on it. It was growing in a pot, and, under the treatment usually given to very cool greenhouse plants, appeared to be quite healthy, covering a considerable portion of the roof with vigorous branches and richly colored blossoms."

New and Rare Fruits.

Duchesse d'Hiver Pear (*Winter Duchess*)—M. Carrière gives a figure of this fine looking Pear in the January number of the *Revue Horticole*. He says: "It is a tree of handsome growth; grows vigorously either on Pear or Quince; is easily trained to any form; comes early into bearing after being worked; has very fine, good, sound fruit, well attached to resist winds, and does not prematurely ripen by hot suns; it will keep (*conserve*) in the fruit room better than any other Winter Pear; it ripens successively from December to April without any becoming damaged; 'Il est en un mot, comme fruit d'hiver, ce qu'est la *Duchesse* ordinaire comme fruit d'automne,'—in a word 'a Winter Duchess'"

It was raised by M. Barthère ainé of Toulouse, France.

Lincoln County Grape.—This is a seedling of Mr. W. H. Read, of Canada West, said to be of the Isabella class. It is a blue grape, berries as large as Ontario, but generally larger bunches. It is said to ripen before the Concord, but quality not quite equal to Delaware. The last was the second season of bearing. Mr. Read has been very successful in raising grapes, and we shall give sketches of some hereafter.

Roger's Hybrid Grapes.—*Hovey's Magazine* says, as these grow older they lose their native peculiarities of foliage, and assume much the appearance of their foreign parents. Nos. 1, 4, and 15, however, he says, maintain their character for hardihood and superior quality.

Improved Persimmons.—Dr. Kirtland has been experimenting with these, he says, in *Hovey's Magazine*, and finds them vary considerable from seed, and capable of great improvement. He remarks:

"The persimmon is perfectly hardy here, [Cleveland, Ohio,] but whether it would bear your climate is questionable. It is found native at Beavertown, 30 miles from Pittsburgh. My trees were raised from seeds planted in 1840. They began to bear fruit in seven years. This tree is dicecious, and at least three out of every four are barren or staminate. The fruits of no two are alike in size, form, flavor, and time of ripening—and they come into maturity, in succession, from the 20th of September to the 1st of March.

Greatly improved varieties will no doubt be produced by crossing and cultivation. The foliage is

rich and beautiful; hence the tree is ornamental on a lawn.

Mead's Seedling Grape.—Through our last year's volume are notices collected from several sources, showing that many of our best qualified Pomologists considered it a very distinct grape. Particularly at page 348, the Lancaster Grape growers, composed of such men as Harvey, Mitchell, Garber, Miller, &c., with the specimens before them for their opinion, say: "*Diana*—keeps well its reputation." *Mead's Seedling*—similar but superior to the Catawba."

In the last number of *Hovey's Magazine*, the editor, alluding to Mr. Husmann's description in our February number, says:

"There is little or no doubt it is the Diana under a new name."

As Mr. Hovey has had the superior advantages of never having seen the grape, the gentlemen above referred to will no doubt feel flattered by the suggestion. The vine was raised from a seed at Lowell, Mass., in 1847, and carried to Illinois in fall of 1850, and Mr. Hovey thinks it had abundant time to bear enough fruit to be well known for its good qualities in that time by the citizens of the Granite State. This may be so in view of the peculiar claims of Massachusetts as a grape growing country, but seedlings do not bear as early here. As Mr. H. did not hear of its good qualities, and therefore does not believe it had any before it left Lowell, and *so* has "no doubt of its being Diana," we presume he has a poor opinion of the Diana grape, which, considering that "it was first brought to notice by us many years ago," is a very remarkable circumstance.

Sometimes we think our friend waggishly inclined, but pomology is too much a matter of fact subject to bear joking about, and it would be better for its readers did the "magazine" treat it more seriously.

New Seedling Pear.—An Ohio correspondent sends us a sketch of a new seedling pear for publication, which he says was "conceded by all who tasted it last season to be a decided acquisition."

The description does not show wherein the new seedling differs from all other fruits, and as nothing very peculiar strikes us in the said description, we hold it over for present.

We do not see the value of new fruits without their *excellence over others in some one point is decisive*, and trust that our correspondent, while receiving our thanks for the trouble he has taken in his desire to contribute to our pages, will admit the justness of our remarks.

Domestic Intelligence.

Planting Osage Orange Hedges.—An intelligent correspondent of the *Germantown Telegraph* objects to setting out a double row of plants, on the ground that they are too thick, and are liable to starve each other. This is certainly an objection. Our main reason for recommending double rows is that accident will often destroy an occasional plant, when the one in the back row will fill up the gap, without the necessity of planting another, which seldom does well. There are evils to be encountered in both practices, and it is not easy choosing "which is the best."

Grafting Bignonias.—A correspondent of the *Horticulturist* finds Tecoma jasminoides to grow readily when grafted on pieces of the root of any of the common trumpet vines. Bignonia venusta is frequently found hard to strike, and the hint may be found valuable for it particularly.

Preserving Posts.—A correspondent of the *Scientific American* suggests that iron chips be placed around the post, about two inches under the surface of the ground. He has tried it successfully on hitching-posts. It not only preserves, but aids in keeping the post in position.

Degeneracy of Sorghum.—An Iowa correspondent of the *Northwestern Farmer* says the saccharine principle degenerates with each succeeding crop of seed on the same piece of ground. As the sorghum is but a sweet variety of the common broom-corn (*sorghum saccharatum*), this is to be expected, and growers should take every precaution to keep their stock pure.

Cement for Glass.—In these days of Aquariums, ferneries, and other glass plant fixtures, it may be interesting to our readers to know that a strong solution of silicate of potash forms a perfect cement for glass.

Peach Lands.—The Missouri Valley is said to be the most perfect locality for the peach in the Union. In twenty years there has not been a known failure.

Tomato Economy.—A correspondent of the *New England Farmer* says, that after trying all methods of training, he finds it best to let the vines

take their own course over brushwood placed for them to run on.

STRAWBERRY FOR FORCING.—Mr Alfred Chamberlain prefers Wilson's Albany. Last February his pots of this variety were "loaded down" with fine fruit.

FRUIT BOXES.—A Mr. Gilbert, of New York, makes a fruit box, suitable for strawberries, raspberries, &c., which is highly spoken of by some of our fruit growers, though we have never seen it. It is described as being made of but two pieces; the corners, instead of being joined, are bent, thus combining extreme lightness with strength, durability, and cheapness. One of these boxes holding a pint, weighs but two ounces, and, being square, there can be enough to contain a bushel packed in a crate of the size of fourteen by twenty-two inches, and only a foot in depth.—*R. New Yorker.*

Foreign Intelligence.

GARDENS FOR SOLDIERS IN FRANCE.—The Rouen *Nouvelliste* says: "At the camp of Chalons, the Emperor has caused to be given to each soldier a small garden, which he is to cultivate and keep in order, and rewards are to be given to the best laborers. Henceforward the troops will devote part of their leisure time to agricultural labors during the summer, and in the winter each regiment will have classes for agriculture and horticulture, for which premiums and medals will be awarded.

EUCHARIS GRANDIFLORA was in blossom on a shelf in the small Victoria house, where its large snow-white flowers and ample deep green leaves had a fine effect. This is a plant which many fail to flower, owing probably to not sufficiently encouraging its growth during the summer months. When it has done flowering, it should be allowed a period of rest; then let it be repotted in good rich soil; when fairly started, grow it freely, and no fears need be entertained that it will not blossom satisfactorily. This is the kind of treatment which at Kew has been found to answer perfectly, each spike producing from four to six blooms, every one of which is as large as a five shilling piece.—*Kew correspondent of Gardener's Chronicle.*

VEGETABLE SILK.—A. C. Vautier, of Paris, has taken out a patent for producing a fibrous material from the mulberry tree, resembling silk, without the agency of the silkworm. The fabric has been exhibited, but the process not described.

PROTECTING VINERY BORDERS.—Some of the best graperies in England now have the borders entirely covered with glass, and heated by hot water pipes.

DEATHS OF EUROPEAN BOTANISTS. — *Michel Tenore*—the author of the Flora of Naples. His merits as a scientific man were of so prominent an order, that King Victor Emanuel conferred on him in appreciation of his character, the dignity of "Senator of the Italian Realm." He died at Naples, aged 81.

George William Francis Wenderoth, died at Marbourg recently, aged 87. He was the Director of the Botanic Garden at that place, and is commemorated by Von Schlechtendahl in his Mexican genus of Papilonaceous plants, as *Wenderothia.*

Horticultural Notices.

PENNSYLVANIA HORTICULTURAL SOCIETY.

DISCUSSIONAL MEETING.

MR. WILLIAM SAUNDERS read an essay on the topic for the evening—"Propagation by Cuttings"—which he illustrated by several cuttings of grape-vines, currants, Begonia leaves, &c. The leading points of the essay, which our limited space restricts us to, were, that cuttings should generally be made from mature wood, except of those which strike with difficulty, as azaleas, &c. These should be of wood just *approaching* maturity.

In most cases, plants root better from a bud than from the bare wood. Those which root with difficulty are sometimes assisted by ringing the bark some time before cutting. Some cuttings root readily in water, others if simply thrown upon a damp surface; but most kinds require a propagating-box. Mr. Saunders prefers the arrangement of inverting a small pot inside a larger one, the space between being filled with drainage, and covered with rather dry sand, firmly pressed in. This secures perfect drainage and aeration. For most plants, an atmosphere of about 70° by day, and 50° by night, and a nearly uniform heat in the soil of about 70°, will be found suitable. In garden propagation, currant-cuttings root best if planted late in September. The indispensable requisites to success in propagation under glass are

thorough drainage and well-regulated light, air, heat, and moisture.

Inquiry was made as to the supposed difficulty of rooting cuttings of the native grapes. Mr. Eadie stated that, if the cuttings are taken in autumn, just as the leaves are maturing, they are easily rooted. Two eyes on each cutting are sufficient.

Mr. Ritchie described the very successful practice of Mr. Pfeiffer, of Cincinnati. He cuts just above a joint, leaves three eyes, and plants so as nearly to cover the upper eye with earth.

Mr. Hayes makes cuttings of six eyes, taking a portion of old wood with the new; plants in deep, rich, well-drained soil, in October, leaving one eye above the surface, and covers with leaves; saves nine out of ten, and obtains stronger vines than the best layers. In spring, by same method, loses one-half.

Mr. Eadie planted deciduous cuttings nearly horizontal; but soft-wooded plants would flag, and perhaps die thus treated.

Mr. Kilvington had observed that all plants having joints or knots, as the bamboo, verbena, salvia, and all the grasses, root more readily than those not thus furnished.

Dr. Burgin explained the chemical action of the elements of the bud and germ, and spoke of the importance of regulating the moisture. In growing potatoes, he cultivates them without hilling up, and always succeeds.

Mr. Parry cuts the native grape-vines just under a bud, leaves three eyes, and plants in rich soil in spring.

Mr. R. Scott grows verbenas in sand and water. They do well if set in the sun. Carnations, lantanas, allamandas, etc., do not thrive under this method.

Mr. Saunders has propagated grape-vines from green wood; does not approve of it, as it produces plants of feeble constitution. He thought those seeds which contain most starch germinate most readily.

Mr. John Sherwood raises a great many evergreens from cuttings, and many varieties quite as readily as from seed. If cuttings are taken from the side branches of araucarias and some other species, the young plants will make no leader. He grows the bamboo and others of that class from slips.

The science of pruning will be discussed on Tuesday evening, March 25th. The opening essay will be read by Mr. James Eadie, gardener to Dr. James Rush.

THE MONTHLY DISPLAY

was held on March 11th, and was the finest and best attended for many months. The majority of the visitors were ladies, attracted, no doubt, by the competition provided for them in the schedule of premiums.

The silver medal for the best hanging-basket of plants, grown entirely by ladies, was awarded to Mrs. D. R. King, and was universally conceded to be a model of correct taste.

Most artistically arranged table design—Mr. James Eadie, gardener to Dr. Rush. *Basket of cut flowers*—the same. *Pair of hand bouquets* to the same.

Collection of twelve plants in not over ten-inch pots—James Eadie. This comprised Franciscea eximia, Acacia pubescens, Begonia manicata, Azaleas coccinea, optima, Mrs. Fry, bride, and extranii; Phajus maculatus, Dracæna Braziliensis, Conoclinium ianthinum.

Collection of six plants in not over eight-inch pots—Adam Graham, gardener to General Patterson. They were Azaleas exquisita, extranii; Bletia Tankervillii, Chorozema variegata, Acacia linearis, and Conoclinium ianthinum.

The *best hanging-vase* by a gardener—James Eadie.

Ornament foliage plants, six in not over ten-inch pots—James Eadie. They were Aspidistra lucida variegata, Pandanus variegata, Ananassa sativa variegata, Begonia splendida argentea, Maranta Porteana, Begonia Madame Alwart.

Second best to Charles Miller, gardener to D. R. King, containing, amongst other good things, the rare Pothos argyrea and Aralia Sieboldii.

Camellias, best six-cut specimens—James Eadie. They comprised Sarah Frost, Candidissima, Alba pleno, Imbricata, Sacco magnifique, Reine des fleurs.

Camellias, collection of cut varieties—McKenzie & Son—contained thirty-six named varieties, in which a new seedling, "Peter McKenzie," was an attractive object.

Azaleas, six in not over ten-inch pots—James Eadie—Coccinea, Mrs. Fry, Louis Napoleon, Duke of Devonshire, Von Geertiana; *Specimen*, Triumphans.

Twelve Hyacinths, in glasses—Mr. John Wandell.

Twelve Pears of one variety—John McLaughlin, gardener to J. B. Baxter, Esq. Belle Angevine.

Twelve Apples, none exhibited; nor was there any competition for the premium offered for early radishes.

John Joyce, gardener to Alexander Brown, was

awarded the premium for *six best lettuce*. The variety appeared to be Early Butter.

Cucumbers, best two—Charles Miller, gardener to D. R. King, Esq.—not named, and we did not recognize the variety. Special premiums were awarded to W. Joyce, gardener to President Baldwin, for a collection of seven large specimen plants, and for a pretty basket of cut flowers; to James Pollock, gardener to James Dundas, Esq., for a collection of rare plants; to Edward Hibbert, gardener to Fairman Rodgers, Esq., for a magnificent specimen of Rhododendron arboreum, which attracted universal observation for its gorgeous beauty; to W. Southwood, florist, for a pretty parlor aquarium, and for a rustic flower-stand; to T. C. Bayliss, maker of rustic work, for a parlor-stand of great beauty, made up principally from knots from diseased buttonwood trees; to John McGowan, Esq., for some of the finest lemons ever seen before the Society (some of the fair visitors, notwithstanding their superior acuteness in these matters, mistaking them for wax-work); to James Eadie for a collection of seedling Azaleas; and the thanks of the Society to M. Vilmorin, of Paris, for splendid engravings of fruits and flowers.

Mrs. E. S. Randolph and Messrs. Harry B. Rosengarten, P. L. Ferguson, A. L. Pennock, W. Hacker, and Lewis Taws were elected members, and fifteen new candidates proposed for membership, to be balloted for at the next meeting.

The next exhibition will be held on the second Tuesday in April (second Tuesday of every month). Premiums amongst other things are offered for twelve plants in not over ten-inch pots; six plants in not over eight-inch pots; Ferns or Lycopodiums, six plants, *grown by a lady;* Pelargoniums, six plants, not over eight-inch pots; Roses, Tea, China, or Bourbon, twelve plants in eight-inch pots, or six plants by another grower. Pansies, six plants in pots, besides vegetables, cut flowers, &c., for which get schedule from Mr. Harrison, the Secretary. The members, with rare courage, have opened their competitions *free to all*—members or not. The pedlars from other towns who swarm around the city will have monthly opportunities to show whether their stock is better—as they are never slow to say—than native grown; and if they do not thus come forward, they should "for ever after hold their peace."

BROOKLYN HORTICULTURAL SOCIETY.

The display on the 11th of March was by far the best made by the Society.

The interest in the "Question" department, which Mr. Mead humorously termed the department of the "Portfolio," continues unabated. The following replies to questions sent in were given:—

Pius IX. and Baron Prevost, two good hybrid perpetual pillow roses. Mrs. Rivers, the best white Hybrid perpetual for cemetery lots. Balsam or Lady-slipper seed has been kept for years without injury. Seeds don't keep well in air-tight vessels; the condensed moisture injures them. Bags in a cool place are best for them. Single roses produce most seed. When all the stamens and pistils are turned into petals, there will be no seed at all; the more nearly double flowers are therefore most nearly barren. August is the best time to plant small evergreens; Bridgeman preferred June. Belle Lucratif, Seckel, Dearborn's Seedling, the best three pears for city yards. Delaware, Hartford Prolific, and Concord the best three grapes. The only good gooseberries are grown in shady places. Only 25 out of 1000 Yucca seeds had been found by Mr. Fuller to grow. Stillingia sebifera is the Chinese tallow tree. Boston Nectarine is best for city yards, because it flowers later than others, and escapes spring frosts. Overgrown fruits are usually imperfect in flavor. How many eyes to be left in pruning grape-vines? members could not agree. Some advocated five, others four, some three, and others two. Tropæolum azureum is a plant like T. tricolorum in habit; but the flowers are more cupped, and of a dull pale blue, and the species not much appreciated by cultivators. Mr. Chamberlaine's fruit trees on exhibition were the same plants that bore in the same baskets last year.

ANNUAL MEETING OF THE FRUIT-GROWERS' SOCIETY OF PENNSYLVANIA.

(*Continued from March number, page* 96.)

On the question of the most profitable of small fruits, Mr. Hiller favored the strawberry; Mr. A. Hoopes the currant; if confined to trees, would plant the Morello or pie cherry. Elwood Thomas found the cherry profitable as a fence-row tree; sold $140 worth from his farm fences last year; did not think so well of cherry orchards exclusively. A. Hoopes thought the sales per tree of their pie cherries were about $10. Mr. Rutter thought no rule could be established from the estimates of a few trees. He knew a man who got $24 last year from a fox grape near his house; but who would think to form an estimate from this, and

plant an acre of fox grapes? His friend had other things to sell, and took the fox grapes along. He would starve had he but fox grapes alone to sell.

On the question of peaches in eastern Pennsylvania, Mr. Grider, from Bethlehem, stated that he and his neighbors were unsuccessful, though they treated the trees to the very best of cultivation.

Mr. Rutter some years ago had great success. His ground was rather poor, and had no manure but clover ploughed down, and afterwards kept clean. His orchard was on the north side of a hill. The yellows was the disease that modern peach-growers had to contend against. This he thought arose from the absence of a high state of cultivation, and consequent vigor.

Mr. Heins did not think this great vigor necessary. At Downington, he knew of peaches produced very successfully on a rather poor hill-side.

Dr. Houghton remarked that peaches always did well in orchard-houses, though pot culture was certainly opposed to vigorous growth. He thought that those who had but a few trees could, by summer pruning, keep their trees dwarf, and, by root-pruning, have the roots always in a small compass, which would insure solid, well-ripened wood; and, to still further guard against injury in winter, a piece of salt-sack could be drawn under the ball, and the whole affair preserved through the winter in a cellar.

Mr. Rutter thought that when all that was necessary to raise good peaches was to keep away the yellows, and when thorough manuring and good cultivation would have this effect, he thought Dr. Houghton's suggestions, when carried out, would be found "not to pay."

Mr. J. Stauffer explained that disease in the peach was often engendered by severe weather in early spring. A few warm days rendered the sap liquid; severe cold succeeding this, the sap was chilled, and became viscid, the pores became clogged, and disease ensued. He thought that there had been changes in climatic conditions, and that formerly peaches did not suffer in this way.

Casper Hiller thought cultivation had little to do with yellows; he knew they were disappearing in localities where they once existed, though modes of culture remained the same. A neighbor had a tree bearing regularly and well for thirty years without any cultivation at all.

Mr. Elwood Thomas thought with Mr. Stauffer that cold did injure peach trees, and had seen growth killed back two feet. He liked north aspects for this reason, that the sap was not excited in spring till the regular growing season came.

Mr. Brinton also bore testimony to the necessity of hard solid wood to get fruit from peach trees. The soft wood formed in rich, highly cultivated soil was liable to disease, and bore no fruit.

Mr. Dingee added his testimony to the fact that where peaches grew strongly they soon failed.

Mr. Stauffer, alluding to Dr. Houghton's idea, gave an instance of a peach bearing successfully the season after removal.

Dr. Houghton offered an idea for preserving choice fruit from curculio. It did not like to deposit its eggs in moist places. Glycerine kept moist and sticky a long time, and the specimens might be dipped in it.

Mr. Rathvon thought gummy matters would clog the pores, and thus defeat the object.

Mr. Rutter thought, whether successful or not, such slow work as singly dipping fruit "would not pay."

Dr. Houghton said, if science showed a successful idea, it was for the practical man to so cheapen it afterwards as to render it paying and generally applicable.

Mr. Rathvon explained that all our most useful ideas sprang from trifles, and were expensive when first put in practice.

Mr. Heins thought some varieties of plums did not rot, though stung by curculio. He named some. Mr. Grider had found the identical varieties named by Mr. Heins rot as bad as any. Elwood Thomas had a similar experience. Mr. Rathvon said moist soil was generally unfavorable to the development of insect larvæ. Mr. Purple instanced corroborative circumstances. Mr. Grider spoke of a shower of insects, in October last, as thick as a very dense snow-storm. He had sent some to Mr. Rathvon. Mr. Rathvon said it was a species of the army worm, and he would give full details of the insects history in some future number of the *Gardener's Monthly*.

Dr. Houghton here entered into a detailed account of his investments in foreign grape culture, which, from his statements, seemed very satisfactory. Some members thought the Doctor had gone to a needless expense in his grape-houses. Cheaper ones would do as well. The Doctor spoke of $700 as being the cost of a house 100 feet by 15. Mr. Hoopes had a house 50 feet by 14 cost $200. The President knew one near him, about the same dimensions, cost $150, made of rough materials.

In our last Mr. Rutter should have said: "Grape growing had not received the attention in Pennsylvania it ought."

(Concluded in our next.)

THE
GARDENER'S MONTHLY.
DEVOTED TO
Horticulture, Arboriculture, Botany & Rural Affairs.

THOMAS MEEHAN, Editor.
W. G. P. BRINCKLOE, Publisher.

MAY, 1862.

VOL. IV.---NO. 5.

Hints for May.

WINDOW GARDENING.

A lady writes: "It is a pleasure to find that you respect the wants of those of your readers who have no greenhouses, but who cannot endure the absence of flowers in some parts of their dwelling. I read regularly what you tell us about these matters, and yet have poor success. When I go through our village and see the windows of the poorer classes crowded with healthy and luxurious plants, with innumerable flowers, and return to my own house, and contrast my sickly looking things with them, after all my care, I grow sick at heart, and must write to you to ask how it is? My plants grow weak, never keep their leaves, and I rarely get a flower. Do please advise me."

The "houses of the poor" seldom have furnace heat, at a temperature of 60° Much of failure arises from this dry warm atmosphere. Plants will not do well without the air is in some measure charged with moisture,—Cactuses, and plants from dry sandy deserts, always excepted. The leaves "fall," as our correspondent says, "and growth is sickly and delicate." As remarked last month, wire frames, filled with damp moss, into which the pots are plunged, will do much to correct the dry air complained of in highly heated rooms. Air must be given on all warm days, and the plants suffered to have the benefit of warm showers, whenever they can. A correspondent gave last month some excellent hints on window "Winter Gardening," to which we refer our correspondent and similar enquirers.

We give herewith a sketch of a selection of patterns of ornamental baskets and vases for trailing plants, that we have selected from the handsome collection which Mr. H. A. Dreer, of Philadelphia, placed on exhibition recently before the Pennsylvania Horticultural Society, as before noticed in this journal. It will afford our readers an opportunity of noting how great the progress of taste has been in this direction the past few years.

As summer approaches, it will be necessary to select a different class of plants for vases in dry or shaded places, from those in use for room decoration in the winter season. For shaded places the varieties of periwinkle, moneywort (Lysimachia), Saxifraga sarmentosa, evergreens and Austrian Ivy, are very good. Some pretty conceits may be formed out of Evergreen Ivy, as it will grow in the deepest shade. Plants can be set in substantial boxes or vases and set behind seats in the front halls or outside piazzas, and trained over so as to form alcoves of living vegetation. Wooden vases for this purpose are best charred before use, to prevent rapid decay. This can be accomplished by burning a few shavings inside. Stone or terra cotta vases are of course much the best for permanency.

It is often desirable to have vases of plants in places so hot and dry that no ordinary species of plant will thrive. For this there is no tribe of plants so admirably adapted as the stone crop family. (Sedums). Indeed, they luxuriate only in such places. The full sun is just the place for them. In Ellwanger & Barry's catalogue, now before us, we are pleased to notice that they have a collection of seventeen kinds, which it will not appear invidious to refer to, as we are not aware that any other firm has paid much attention to getting a collection of them together. One of the prettiest for this purpose—Sedum acre—they do not enumerate, but this under the common name of "Love Entangled," is found in every country village.

FLOWER GARDEN.

Many of the flower-beds have been filled with Hyacinths, Tulips, and other spring-blooming bulbs. Unless very thickly planted, the summer-blooming border plants may be set out of their pots in between these,—that is, if they have done flowering. Tulips will probably scarcely have had their bloom over, and must remain longer. If any pressing necessity exists to remove such bulbs, with care they may be transplanted, watering the soil before and after trans-

planting. They can then be put in any spare spot where they will not be in the way for a time. Transplanted bulbs, however, seldom bloom so well the next season. It is very important, where this is an object, to retain the foliage fresh to the latest possible period.

The first week in May is usually the time in this section of the Union for turning out border plants from pits and frames, and setting out on the lawn large tubs and specimen plants that have been wintered in doors. As the plants in the borders grow, peg them down with split twigs. That is those intended to be grown in masses or, for covering the soil.

The first week in May is usually the time to set out Dahlias. They do best in a trenched soil, say eighteen inches deep at least, and prefer cow-manure to any other when it can be obtained. If planted on thin or dry soils, they will not bloom till near the approach of frost, when the chief enjoyment of the Dahlia is lost. It is best, where possible, to plant a duplicate of each kind.

Tuberoses and Gladiolus like a warm rich soil, and may be set out at once. Mr. Bridgeman's remarks on tuberoses in our last will be found interesting.

In transplanting any thing that has roots large enough to admit of the practice, it is best to dip the roots, immediately before planting, into water. This will obviate the necessity of after-watering, and its consequent injurious effect. If the plants appear to flag, shade or put an inverted flower-pot over the plant for a few days; if this does not bring the plant to, it must have water.

Flower-gardening affords scope for many pretty fancies, besides arrangement of color, which, in the hands of a person of taste, render a garden a paradise of enchantment. Borders and edgings of ivy, periwinkle or variegated plants, may be made to appear as frames to the pictures of pretty flowers enclosed by them. Waves and fringes of green may be led along through a large flower-bed, and the various divisions formed be filled with its own color, making a natural and living bouquet; different colored gravels may be chosen for paths between beds; different shades of green be made by the selection of grasses of different hues, where grass walks are employed. Old stumps or roots may be occasionally introduced in the centre of beds, and covered with green vines, or flowering climbers, as taste may dictate; rustic baskets and vases, and even in many instances where artificial styles prevail, the topiary art may be called in, and good effects result from the use of the knife and shears on certain plants.

FRUIT GARDEN.

Summer pruning fruit trees is yet but imperfectly understood,—many stopping all shoots indiscriminately. Only those should be pinched back that seem likely to grow stronger than others. The object is to get all to grow of one uniform strength. If one shoot grow stronger than another on a fruit tree, the others will get continually weaker, and by and bye worthless. Pinching them off weakens a strong shoot, if done before it partially hardens; and the new shoots it is afterwards compelled to put forth, will be no stronger than those not pinched back. Except in very few instances, if due attention were paid to summer pruning, there would be no occasion at all for winter pruning.

The now fashionable "rage" for heading off street trees to keep them low for purposes of shade, cannot be accomplished by the generally practised spring pruning; but if they were gone over in spring, before the vigorous shoots had time to rob the weaker ones of their due support, and these luxuriant sprigs taken out, a low branching tree could cheaply and easily be obtained, without deforming the trees as the present custom does.

We omit the usual hints this month on Strawberry cultivation, as an article in the body the work, by Mr. Knox, covers the whole ground.

VEGETABLE GARDEN.

Cabbage, Cauliflower, and Brocoli, are now set out for fall crops, and Endive sown for winter Salad. Lettuce also for summer and fall use. This, however, must be sown in very rich soil, and in a partially shaded situation, or it will go to seed. Peas, Beans, and other crops, should be sowed every two weeks. They do much better than when a large crop is sown at one time, and then have too many on at one time to waste.

Melons, Cucumbers, Corn, Okras, Squash, Beans, Sweet Potatoes, Lima Beans, Peppers, Egg-plants, Tomatoes, and other tender vegetables that do not do well till the suns gets high, and the ground warm, should go into the soil without delay.

Bean poles should be set before the beans are planted; and near cities where they are comparative high priced, their ends should be charred. This will make them last some years.

Keep weeds of all kinds down from the time they first show their seed leaves. It not only saves labor "in the end," but the frequent stirring of the soil vastly serves the crop. Sow a succession of vegetables every few weeks,—sometimes insects, sometimes frost, or occasionally other accidents will cut off a crop, and then there is some chance for its successor not wholly to disappoint.


Stockton Sc.

Communications.

MISCELLANEOUS SKETCHES.

BY ORCHIS.

THE deeper that we investigate and examine into the operations of nature, the more beautiful and perfect do all her works appear; and in no part of Natural Science is this better exemplified than in the growth and structure of the botanical world.

From the bursting of the cotyledon, to the mature tree, every successive stage is marked by the presence of an infinite power, superior far to the mind of man: and which will invariably exert a refining influence over every individual that becomes interested in the study.

To a certain extent is this the case with the arboriculturist who surrounds his dwelling with the choicest gifts of Flora, whereby he not only creates an added beauty to his home, but is also amply repaid by the cool refreshing shade and cheerful fragrant flowers.

> "O, painter of the fruits and flowers!
> We thank thee for thy wise design,
> Whereby these human hands of ours
> In Nature's garden work with thine."

In the whole list of available trees for ornamental purposes there is probably no genus that can at all compare in beauty with Magnolia family; and being all natives of antipodal countries with temperate climates, they will, with two or three exceptions, thrive admirably in the Northern states.

From my memorandum book I have prepared the following brief synopsis, descriptive of all the known species and recognized varieties according to De Candolle.

Since his time however a few new species have been discovered in Japan by Dr. Siebold, although no very definite description has yet been given. He mentions the *M. hypleuca* and *M. nymphœoides* as being very beautiful.

The American species are the glory of the Southern and Western forests, and are remarkable for the delicious fragrance of the flowers, the surpassing beauty of the foliage, and the clean smooth bark.

The most majestic and handsome of all our native species is the *M. grandiflora* (Evergreen Magnolia), with bright, glossy leaves and large white flowers that abound with a delightful odor. Unfortunately this fine tree will not succeed satisfactorily north of Baltimore, although a specimen in Philadelphia has attained the height of thirty feet and annually produces a profusion of blossoms. The recognized varieties are *var. obovata*, *var. elliptica* and *var. lanceolata*, all differing principally in the shape of the leaves. Leroy enumerates nineteen varieties in his catalogue, all of which I have tested, but do not consider any of them superior to the species; excepting the *var. Gallissonniere* (Rusty-leaved Magnolia), which is probably more hardy. My specimen is eight feet high, and has proven very satisfactory with a slight protection.

M. Mexicana, of which I have never seen a specimen, is unsuited to our climate. It might perhaps flourish in the Southern states, although I never heard of its trial.

M. glauca, eulogized by Darlington, is his "Flora Cestrica," as this "delightful little tree," is a particular favorite with me; and notwithstanding it is a native of low swampy grounds, I have seen very beautiful specimens growing on high and light soils. The peculiar fragrance exhaled from the creamy white flowers of this species, must enhance its value wherever known. *Var. longifolia* is quite distinct and desirable. *Var. argentea* has the under surface of the leaves covered with a very white pubesence.

M. umbrella, Lamark; Syn. *M. tripetela*, Mx., is the most common in ornamental grounds, owing probably to the ease with which it can be propagated. It is not so attractive when in flower as some other species, but is nevertheless a valuable second class tree of rapid growth.

M. acuminata is the Cucumber-tree of the Western states, where it attains an immense size, and forms one of the most attractive objects in the forests. The peculiar pyramidal shape of this species admirably adapts it to certain situations in in landscape gardening. *Var. Candolli* is the only variety described by DeCandolle, although not acknowledged by more modern authors.

M. Fraseri, Walter. Syn. *M. auriculata*, Lamark. The strong odor of the flowers produced by this species is disagreeable to some, although to others very gratifying. The beautiful large leaves are from eight to twelve inches long, and curiously cordate at the base, resembling the lobes of an ear; hence Lamark's synonym. It forms a second class tree.

M. pyramidata (?) of which little is known, is probably nothing more than a variety of M. Fraseri or M. acuminata. My specimen inclines me to the latter belief; however, it is now unrecognized by the standard authorities.

M. macrophylla (Large-leaved Magnolia), is decidedly one of the finest ornamental deciduous trees in cultivation. It flowers very freely in the early part of summer, and is adapted to all soils and situations, if not exposed to high winds; as the young

shoots are liable to be broken before maturity. When in a healthy condition the leaves will measure from two to three feet in length, and the blossom ten inches in diameter. There is an oriental appearance in this tree that commends it to the notice of all.

M. cordata forms a small tree and produces beautiful yellow flowers, that are highly fragrant. The leaves are but slightly cordate, and somewhat downy underneath. The true plant is quite rare in collections, perhaps on account of its being frequently unknown by venders, and a spurious kind cultivated and disseminated in consequence.

We now come to the Asiatic Magnolias, which are mostly of small size, but hardy and very desirable.

M. Yulan, of De Candolle. Syn. *M. conspicua*, Salisbury, produces a profusion of pure white flowers before the appearance of the leaves. It is a small but very handsome tree, and is greatly improved by being worked on the M. acuminata.

M. Kobus, of De Candolle. Syn. *M. gracilis*, Salisbury, is a large shrub, much resembling the following species, but having more slender shoots and lighter colored flowers. It also occasionally produces a second bloom.

M. obovata. Syn. *M. purpurea*, is the charming Purple Magnolia of our collections. This very desirable small tree is one of the choicest ornaments in a mass of shrubbery or as a single specimen on the lawn. De Candolle mentions the following varieties: var. discolor, var. denudata and var. liliiflora. They vary but little from the species.

M. fuscata and *M. pumila*, are the remaining species. These are small shrubs, bearing deliciously fragrant flowers ; but unfortunately rather tender for out-door cultivation. Of the former there are two varieties: annonæfolia and var. hebeclada.

The following are as yet undetermined and but little known: M.(?) inodora, M.(?) Coco and M.(?) Figo.

The different hybrid Magnolias are of much value to the arboriculturist, and should be extensively planted. The best and most distinct among these are M. Soulangiana, M. Alexandrina, M. Thompsoniana and M. Norbertiana. The first named variety is the most showy of all the Magnolias, and very desirable. M. Thompsoniana is evidently an offspring of M. glauca, and partaking of the habit, etc., of that species.

Before closing these notes I wish to suggest a few hints to those whose experience is somewhat limited. In transplanting the Magnolia, the operation should be performed immediately before the buds commence to swell, and *never early in the season*. In planting, the soil must be pulverized as finely as possible, and great care taken to have all the interstices among the small rootlets filled.

I have known pure sand used for this purpose with excellent success. The roots should never become dry before planting, neither should they be soaked with water; their peculiar fleshy texture render them very impatient of either.

TOMATOES.

BY NOVICE.

A VERY successful method of culture of the Tomato practised last season by the writer, may be new and useful to many of your readers.

When the young plants are ready to transfer from the hotbed to the open ground, remove all the *buds* at the axil of each leaf, except the two upper ones; this can be easily and rapidly done with a sharp pointed splinter of hard wood, without injury to the plant. Transplant carefully with a ball of earth into rich soil, and as soon as well established pinch off all the lower *leaves*. Thus only two branches are formed, which grow with great vigor, and set a large amount of fruit, which is of much larger size than that grown by the usual mode. Many of mine, of the Large Smooth Red variety, weighed over two pounds. The trellis described and illustrated on page 206 of your last volume, I have used for some years, and find it stronger, better and more economical than any other ever tried by me.

EVERGREENS.

BY F., LITHCOMBE, VA.

WHILST I write, the snow flakes are falling noiselessly and leisurely; I look round, and a perfect picture of winter meets my eyes. The white pall is thrown over nature, only the outlines of the country remaining visible; all vegetation, either dead and gone entirely, or standing there stark naked like so many corpses. All vegetation, did I say? Would you, dear reader, tell me that the Evergreens yonder refute me? No indeed not, to my eyes they look just as much like corpses as do the deciduous trees; the difference is but slight—these are bare corpses, the others are corpses with their clothes on. But all is dead to my eyes, and I see the winding sheet wrapt round and round by the ever falling snow. The pulse of nature has stopped and the burial is going on.

I leave my room, and wade through the snow up to the crest of yon hill. The sun has just disappeared from the horizon, leaving a lurid red light in the western sky, that reflects it ghastly shine in

the frozen lake at the foot of the hill. A solitary crow sails over its surface, flapping its heavy wings —the picture of solitude. Profound melancholy in the air. With the retreating light one would fancy creation will be silently extinguished—will die away into eternal cold. I would fain sit me down, shut my eyes, let sweet melancholy fill me and rock my brain, now wildly, now softly, now more softly still, till I too shall pass away with creation into eternal cold, and noiselessly annihilated. Have you ever tried, my reader, this opiate of cold? Woe to you if you yield to it—death is certain. Rather rouse yourself and remember: There *is* a morrow, there *is* a spring and there *is* an eternal kindness.

So I hurry home, trying to forget my erring thoughts. Through the grim pines lies my path. The falling light, and their snow-covered boughs, makes me think that I have to pass through the lines of Alva's stern and rigid veterans. As I have passed them, I shake off the load from my mind Once home, all is forgotten.

But I will probe the effect of Evergreens, and so next morning I return to them; for be it known to all whom it may concern, that I have spent several years in a warm country, where winter, in our sense of the word, there is none; and where, of coniferous Evergreens, there are none. That I have returned last spring, and that this is my first winter again at home. That therefore, stranger like, I will let impressions come over me, and show me things true.

What a change has come over the scene, when this morning, I visit my hill! A thin, crisp atmosphere, a cloudless sky, and a magnificent sun, almost dazzling, for it shines not only on the spread snow and on the frozen lake, but shines with ever so many refracted rays, in crystals pending from the trees, or from wherever its warmth has been able to melt the ice a little. Under the intense light of this sun, the dull dead green of my Evergreens assumes a warmer tint, and the branches edged with fringes of snow, and studded with glistening drops, offer a picture of both death and life, warmth and cold. Such hours are the dreams in nature's sleep.

Toothless old Anacreon, his white head trimmed with green laurel, his sunken cheeks rosy from wine, at second look is but a pitiable sight, And with the same feeling I turn from the Evergreens, feeling the winter no less although I see it is its apotheosis.

But why do I strive to connect winter with Evergreens? Because I have so often heard it said that they make winter cheerful, and because I so often have seen them planted out in pleasure-grounds and even gardens, so profusely and with so decided a preference over deciduous trees, that I doubted whether such planters had ever studied the works of creation.

Evergreens, in my opinion are overrated. The charm of nature is expelled wherever they preponderate. Nature herself has planted them mostly beyond the reach of man, on the top of mountains where vegetation in general will not flourish. In the valleys where Man walks, she has put the graceful deciduous trees, to gladden his sight. Their round heads are the very line of beauty. She gave them, moreover, those manifold qualities wherewith to serve Man—her favorite creature.

We can, therefore, learn of Nature herself how to apply and plant trees. In this way we shall learn to place Evergreens on exposed and rough spots, where they will cover the nakedness of the land (sand-barrens), or hide the repulsive sterility of rocks; or where we want to screen us from the blast that sweeps the plain, or where we want to protect our dwelling and garden from the Norther or Northwester.

But to plant Evergreens for beauty's sake, quite different rules will have to be observed. They have little of inherent beauty in their forms and growth compared to their relatives, the general family of trees; and so we must go by the rule of contrast, comparison and variety in planting them.

We will try to explain further in another article.

PROFITS OF FRUIT CULTURE.

BY "GULLIVER," PHILADELPHIA.

If we may believe the stories lately told us by some of the dealers in native grape vines, strawberry plants, etc., there is no way to wealth so sure and productive as the culture of these fruits. One dealer in native vines tell us that he can plant one thousand Concord grape vines on an acre of ground, which will, the third year, produce twenty-five pounds of fruit per vine, or twenty-five thousand pounds per acre, which, at fifteen cents per pound, (a moderate estimate according to this authority), would realize the snug little sum of *three thousand seven hundred and fifty dollars* per annum! An acre of Concords, therefore, is all that is needed to maintain a genteel family in good style.

Another enthusiastic dealer in Wilson's Albany strawberry plants, says this strawberry will produce three hundred and fifty bushels per acre, which, at fifteen cents per quart, amounts to $1,680, and at twenty-five cents, to $2,800 per annum! One acre of Wilson would certainly provide a good living for a poor man.

But even this, it appears, is nothing to what may be done, in the culture of small fruits, in some parts of our favored country, as the following story, which I find in the newspapers, will conclusively prove. Hereafter let the big story tellers of our Atlantic coast hide their diminished heads. California produces Duchess pears weighing five pounds, and beats our cultivators of the Native grape "all to pieces," in the amount and value of her products. I give you the story just as it appears in that veracious channel of information, "the newspapers." This it is:

"A poor girl in California picked up the cutting of a grape vine, thrown into the road, in order to drive her mule. She carried it home, and though it was wilted and worn and appeared good for nothing, she stuck it into the ground, 'It has a little life left,' she said, 'I will try and save it.' So she watered it, and watched it, and took as much care of it as if it were the most promising shoot in the world.

"Well, how did it reward her? In one season, after it was six years old, it bore five thousand bunches of grapes; each bunch weighed one pound, and these, on being sold, brought her the handsome sum of $4,000!

[Questions of profit are the least satisfactory of of all questions that can be discussed. So many contingencies govern results, that no general rule can be formed. There is no business in which, by some accident, an enormous profit is not occasionally made. It would never do to expect such profit as an every day occurrence.—Ed.]

ESTIMATE FOR A CHEAP VINERY.

BY MR. J. E. MITCHELL, PHILADELPHIA.

ADOPTED BY THE FRUIT GROWER'S SOCIETY OF EASTERN PENNSYLVANIA, AT ITS MEETING, HELD IN LANCASTER, FEBRUARY, 1862.

Gentlemen:—There is probably no part of fruit culture about which there exists so much misapprehension as that of growing foreign grapes under glass, both as regards the first cost of the house, and the after treatment of the vines. Hoping to show that the one can be built at a very moderate cost, whilst the other is so simple that any amateur or his laboring man can manage them with ease and certainty, I beg leave to offer the following plan for a vinery 15½ by 23½ feet, with an inside and outside border 28 feet square, which should be well trenched and manured in the usual way. The piers may be of brick or stone, 9 or 16 inches square, and about 30 inches deep, with 6 inches above the border. The sills may be of hemlock, (although white pine is more lasting), 3 by 9 inches, 12 feet long for the sides, and 16 feet for the ends, halved together in the middle and at the corners, and coated with a mixture of coal tar and rosin, melted together and put on hot.

The rafters and end pieces to be of yellow (or white) pine flooring, planed and rabbeted at the mill, and nailed to the sill and top string piece at the proper distance for 12 inch glass. The string piece to be 6 inches deep by 2 inches thick, (or two pieces of 1 inch thick nailed together). The ventilator to be of planed white pine boards, 18 inches wide, 8 feet in length, nailed with cleats, and hung with hinges. The doors to be of planed fence stuff, and put together with cleats.

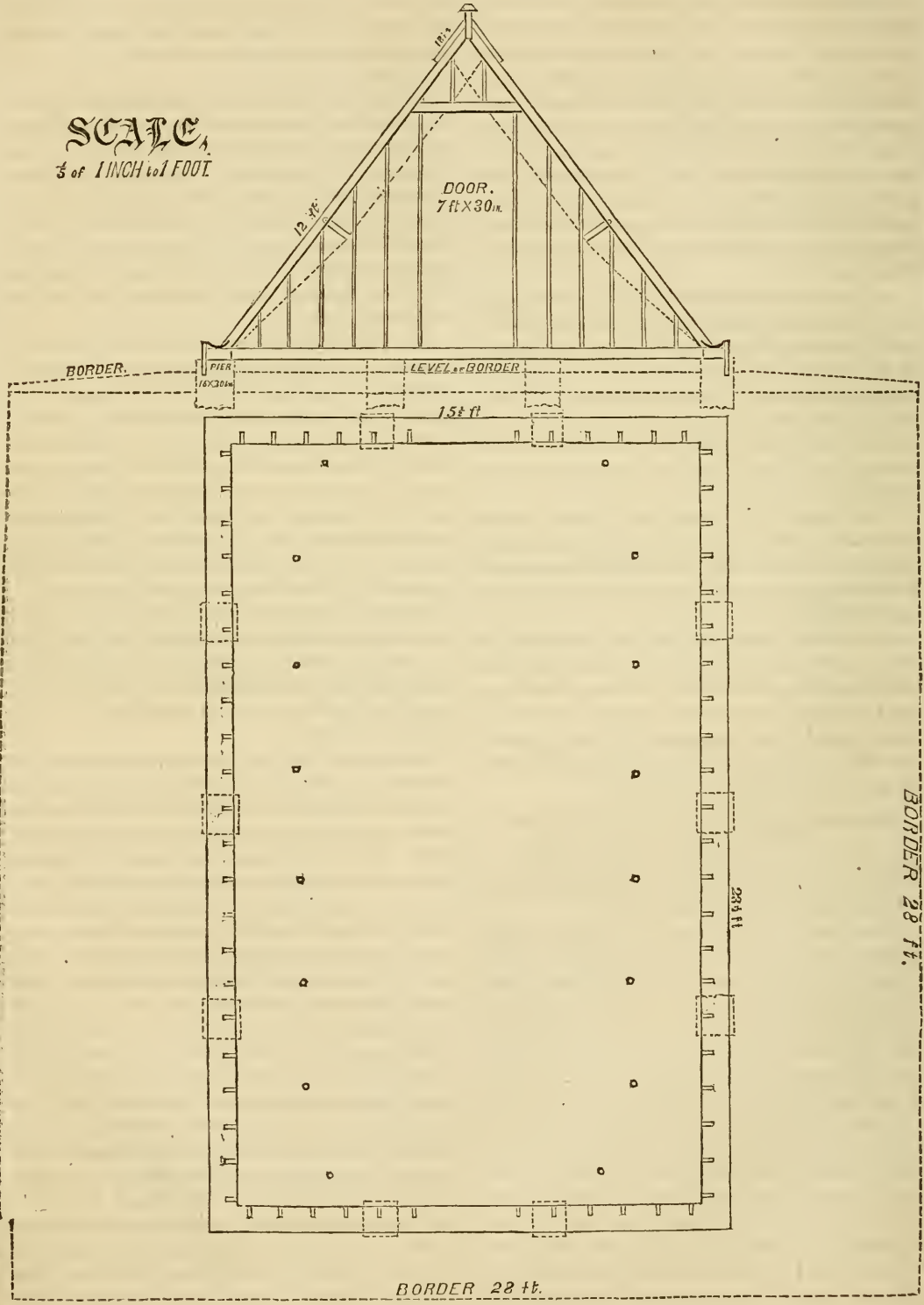
Weatherboards, 12 inches wide, should be nailed around the outside edge of the sills, and extend 7 inches below, and inches above them, against which a strip of tin or zinc should be nailed for a gutter.

No. 15 iron wire may be fastened to the opposite rafter at the top, and the sill at the bottom, and stretched tight with a strip (about 9 inches long) secured to the middle of the rafter. The glass may be of third quality, 10 x 12, bedded in a thick paint, made of white lead and whiting, and well bradded, the outside rabbet to be coated with the same.

The whole of the woodwork should be varnished with common bright varnish before the glass is put in. A close estimate of the cost, (allowing $25 per thousand for the mill lumber, and $3 50 per hundred feet for the glass) will show that it can be built for about $75.

The manure, etc., for the border should not exceed $8, and the labor about $4. Sixteen good one year old vines can be had for $8, so that the entire cost of house, border and vines, should not exceed $100. The vines should be planted inside the house, about 2 feet from the side, and 3 feet apart; to be trimmed by the spur method. These vines should produce a bunch of grapes each the second year; four to five bunches each the third year, and ten to 12 bunches each the fourth year, all of which if sold at 37½ cents per pound, would pay the entire cost, with interest.

[We give this, not as the very *best arrangement* that could be made, but simply as showing how cheaply such structures can be erected. In this point it will serve a very useful purpose, and Mr. Mitchell deserves the thanks of the community for the trouble he has taken in furnishing such a plan for the use of the society. We should be glad to receive any suggestions from other parties who may see where improvement may be made consistently with the main idea,—a good vinery for a small sum of money.—Ed.]


SCALE,
½ of 1 INCH to 1 FOOT
DOOR.
7ft X 30in.
12 ft.
BORDER.
PIER
16X30in.
LEVEL of BORDER
15½ ft
23½ ft.
BORDER 23 ft.
BORDER 23 ft.

NEW JAPAN PLANTS.

BY FRANCIS PARKMAN, JAMAICA PLAIN, MASS.

A GENTLEMAN of Boston, returning last summer from Japan, brought with him a collection of rare plants of that country, which, from the novelty and unique character of some of them, are well worthy of notice. They have not been long enough in the writer's hands for ascertaining fully their habits and probable value. A large proportion consists of varieties of pine, rhododendron, cypress, glycine and cryptomeria. Among the rest the following are most remarkable :

A species of Euonymus, with a shining dark green leaf, variegated with a vivid yellow. Its habit of growth seems very vigorous, and the effect of the variegation is strikingly ornamental.

A species of Thuja, variegated profusely with a bright silvery hue, contrasted with a foliage of a clear green. If hardy, it will prove a most valuable acquisition.

Two plants of the Cypress family, the one variegated with yellow, and the other with white. Both are curious and beautiful.

A Gingko tree, variegated with white strips or bands over the surface of the leaves.

A species of Podocarpus, variegated with yellow stripes.

A plant, believed by Professor Gray also, to belong to the genus Podocarpus, though different from any described species ; with a broad ovate leaf, variegated with whitish stripes.

A plant resembling a Holly, with a dark green leaf, mottled with yellow.

John Standish, the well-known English nurseryman, advertises this year a collection of Japan plants, described as of great rarity and novelty. It includes, however, only a part of the above collection, which was made under the direction of an eminent botanist, then resident in Japan. No names were sent with the plants.

[Messrs. Parsons of Flushing, have also received a fine collection, and we hope for some new additions amidst so great a variety.—ED.]

HORTICULTURAL NOTES FROM BOSTON.

BY MATHIOLA.

FRUIT CULTURE.

At the Legislative Agricultural and Horticultural meeting at the State House, March 10th, in the evening, Hon. Marshall P. Wilder presided and introduced the subject of the Evening's discussion.

He said success in fruit culture depended on appropriate soil and location in the first place ; next upon the selection of hardy sorts suited to our latitude ; then upon proper treatment. All soils were not suited to order. Some varieties had a wide range of culture or adaptation, and the U. S. Pomological Society found they had not only to divide the country into the existing States in recommending varieties for culture, but the States themselves; and Illinois, among others, was divided into three districts. The Bartlett pear succeeded wherever any pear can be raised.

Some have supposed that the Grape only succeeds on the Western slope of the Rocky mountains ; but though they do not succeed so well on the eastern as on the western side, and the latter is favorable to almost every variety, there were varieties which were well adapted to our region.

Fertilizers should be well mixed with the soil. The soil need not exceed eighteen or twenty inches in depth to encourage the roots to spread, rather than go deep. No one can place too much importance on the proper setting of the tree. Success greatly depends on the manner of preparing the soil and planting the tree. Having prepared ample room for the roots in setting out the tree, and planted it, let your subsequent manuring consist in spreading the manure on the surface and forking it in. Manure put in deep is of little or no use to the tree. Our venerable friend, now gone, Hon. B. V. French, has often told us in this hall how little manure is made available to the tree, or to any crop when plowed in deeply. But the manure should be well rotted—decomposed and fine.

The object of pruning is to assign the branches to their appropriate place, and to limit their extent. Different varieties require various pruning. Prune when the trees are dormant. My thirty years' experience gives me confidence that this is the best period for pruning. My men began to prune some time since ; when the wounds bleed they do not heal. Do not prune when the sap runs freely. The cold piercing winds of autumn in our part of the country, are most injurious to the fruit buds and to the trees.

On the first of October, 1860, the mercury was so low as to cause apples to split open on the trees, in the vicinity of Boston. The trees were injured at that time, and again on the 8th of February. Our meteorologists have no record, I believe, of a change so great in temperature. There was a difference of seventy-eight degrees in twenty-four hours. In consequence of these variations, our last crop of fruit was a failure. But I have never known my Vicar of Winkfields, Louise Bonne de Jersey, Belle

Lucrative or Urbaniste to fail in their crops during thirty years, though apples have failed repeatedly; and I think these varieties of pear are hardier than any varieties of apples. I think the piercing winds from the Northwest are as fatal to fruit trees as a scorching heat. I have lost thousands of young stocks of quince and grape plants from this cause alone, though they were perfectly healthy plants. We can make a soil which will grow pears equal to any in the world; but our climate here is not so favorable. That of California surpasses any other for the culture of fruit.

We have considered the importance of the site of orchards too little. Mr. Rivers has just written me that he has lately seen Dwarf Pear trees forty years old in perfect health, and they are likely to live forty years more.

The prospects for the present year are most encouraging. Last season was moderately dry with a clear sky. The trees have made in general, but one growth, which was well ripened. I expect a full bloom, and think there is little danger to the crop of the next season—think I never saw a more favorable prospect.

"I have seen," Mr. Wilder said, "with great pleasure, the progress of fruit culture during the last thirty or forty years, and look upon the fruit-grower as a philanthropist, and hope that the time will come before long when the pursuit will be followed universally—spread broadcast far and wide all over the land."

Dr. Loring enquired what Mr. Wilder thought of grafting on suckers?

Mr. Wilder said, "There is no greater curse to an orchard than a tree grafted on a sucker. I would as soon expect to see a child grafted on the head of a man, grow, mature, live and thrive."

Dr. Loring said, "He supposed that was the conviction of the President, but desired to hear it and have it proclaimed, that the practice might be discouraged."

Mr. Wilder said, "From experiments which had been made, he hoped that the process of simply laying down raspberry vines and grape vines upon the surface of the ground, would prove ample protection to them from the cold and piercing winds. He always used shellac or some other covering for wounds in pruning, when they were as large as the thumb."

Mr. Howard, of the *Boston Cultivator*, had seen Newtown Pippins in a shop in Edinburgh wrapped up in paper, for sale as the best in the world, and so described by the shopkeeper, and compared with the best French and English apples by him; who said they were imported from the United States, and sold at twelve cents apiece. He said there was a very great quantity of fruit exported to his knowledge, and the quantity was yearly increasing vastly, and thought there was great encouragement held out to the fruit-grower. But the Newtown Pippin does not succeed in New England, nor the Esopus Spitzenburg.

Mr. Wilder thought the Tompkins County King likely to succeed quite as well in New England as in New York, and was one of the very best in cultivation. He thought, and other gentlemen agreed with him, that the Baldwin, the R. I. Greening, Roxbury Russet and Talman's Sweeting were the best apples for general cultivation.

Mr. Sheldon cultivated a green sweet apple, (showing a specimen which proved to be the Green Sweeting), which always produced a full crop, never was wormy or knotty, and was good in the following June.

Dr. Loring had found lime employed in combination with pruning very successful in renovating old orchards or old fruit trees. He advocated placing an orchard on land which could not be readily cultivated on account of being rocky, provided the soil was good, there being much of this land in New England, which seemed peculiarly adapted to orchards.

Mr. Sargent desired to learn the opinion of Mr. Wilder concerning the new hybrid grapes.

Mr. Wilder was very much interested in the hybrid grapes raised by Mr. Rogers, and thought he had secured some exceedingly valuable varieties. He thought his experiment one of the clearest instances of crossing, either vegetable or animal.

The time being already taken up, the subject of Grapes and Small Fruits was left to be considered at the next meeting, when Mr. Wilder promised to address the meeting.

PEACH BORERS.

BY A. H.

A CORRESPONDENT in the March number of the *Gardener's Monthly*, recommends burning fluid for the destruction of Peach-borers, and says, "perhaps Spirits of Turpentine might do; but I don't know, as I have not tried it."

A gentleman in Erie, some years ago, in a fit of desperation, gave an application of Spirits of Turpentine to his peach trees, which were much affected by the borer, and on being asked the result, said it was radical and thorough, the trees in two hours being so dead that no borer could injure them.

The writer of this tried one year, with good success, a strong wash of tobacco-water, applied on a dry day in June, and the tobacco leaves left around the collar of the tree. In the autumn but one worm was found in a dozen trees.

NELUMBIUM LUTEUM.

BY MR. W. N. CANBY, WILMINGTON, DEL., AND "OAKNEATH," CLEVELAND, OHIO.

MR. CANBY writes:

"I have been quite interested in reading the various articles in the *Gardener's Monthly* relating to the Nelumbium luteum; and having received specimens of the plant the present season from Illinois and Wisconsin, I have written to my correspondents in those States requesting information as to the character of the plant, and whether apparently introduced. I have now their answers. The gentleman from Wisconsin (Mr. Hale, of Madison, a well known distributor of Botanical specimens) says: 'It inhabits the sloughs or back-waters along the Mississippi, where it is abundant and undoubtedly native.'

"From Illinois the report is, 'Nelumbium as it occurs along the Sangamon river has all the appearance of being an indigenous plant. It grows, not in the river, but in what is called *lakes*, which are found in the valley of the river—probably occupying deserted courses of the stream.'

If it be indigenous in the West, I do not see why it should not be so here, where the latitude is so much lower; but at the same time must admit that the localities here have an artificial appearance. It grows at Woodstown, N. J., in a mill pond, near the head waters of Salem creek,—a locality which I have not seen mentioned. I may mention that the specimens from Illinois were very fine, the leaf a foot in diameter, and the flower about eight inches."

The following is the communication from Cleveland:

"In your February number, Col. Carr says, 'he has been informed that these plants (Nelumbium luteum) grow in Put-in Bay, south end of lake Erie; but perhaps it was only the *Nymphœa odorata*.'

"Now if the Colonel had lived within a hundred miles of the south end of lake Erie, and had any *hunt in him*, he would doubtless have been able to make such a statement without a 'perhaps.'

The rivers which flow into lake Erie, in the neighborhood of Sandusky Bay, which lies in the main land opposite the Put-in Bay Island, are bordered by extensive marshes (abounding in wild rice) which are annually visited by immense flocks of ducks, and also a corresponding number of hunters. In the more open parts of these marshes, and the stiller portions of the river are found both the *Nelumbium luteum*, (Water Chinquapins), and the *Nymphœa odorata*, (Water Lily).

"I remember gathering quite a quantity of the seed receptacles of the former, (some of extraordinary size), and carefully putting them up in the parlor of mine host, 'the Captain,' until I should return home.' But when the time for packing up arrived, I found my "sweet acorns" nearly all eaten up by the children.

"The leaves and seed receptacles I have seen very large in those marshes."

[The gallant Colonel is the oldest living soldier of the war of 1812, and when in the neighborhood referred to by our correspondent, he had just then "something to hunt" of more importance to his country than Nelumbiums. Had our correspondent the privilege, as we had this summer, of seeing the grey haired veteran, of we believe nearly ninety years of age, marching at the head of the remnant of his old fellow warriors, advancing again to offer their services to their country, he would hardly ask if he had any "hunt" in him, as he says.—ED.]

REMEDY FOR THE ROSE SLUG.

BY W. B., TAUNTON, MASS.

I REPLY to the inquiry of "Dorchester," in the March number of the *Monthly*, for a remedy for the "green worms on roses," by which I suppose he means the insect known as the "Rose Slug." I would say that Whale Oil soap, if properly applied, is a sure and speedy remedy. Having used it with my own hands, and witnessed its results for eight or nine years, I think I can speak with confidence of what I know. While I have preserved my plants from the ravages of the pest, I have very materially reduced their number in my garden, so that, while the number and size of my plants has very much increased, the labor of protecting them has been perceptibly lessened. To attain this result, I have proceeded in this wise:

As late as may be in the season, before the opening of the blooms, put into a bucket, say about four pounds Whale Oil soap (of late years I have not been particular to weigh or measure, being governed by the color, taste and smell). Upon this pour a kettle of boiling water. With a stick, with a square end, stir and "mash" the soap till it is all dissolved. Let it stand a few hours, and strain through a piece of coarse sacking into a tub which fill with

water. As you use it, dilute still more, to as many as eight pails of water. Apply it at night, in fair weather to the plants by means of a good garden syringe, with a *fine* rose. And here let me say, the work must be thorough. Commit it to no hired help; if you do it may be slighted. But grasp the syringe yourself, and make a furious attack upon the plants. Charge upon them at every point; go round and round, and round again each bush, and drive, with all the force you can command, the fluid into every part, and under every leaf. Get down upon the ground and force it up, wetting the under side of the leaves, where the insects at this time of the day most abound. After feeling sure you have thoroughly drenched the entire plant, you will find, by turning up the under side of the leaves, they have not all been wet. But charge into them again, and draw them through the wet hand; for, if you have been faithful, your hands and clothes will have become pretty well wet. But no matter for that; you are engaged in a just war, and you must not count the cost. And if your good wife should turn up her nose at the offensive odor which for awhile attaches to you, she will excuse it when she comes to look upon the clean, glossy, healthy foliage of her rose bushes, rescued from ruin by so efficacious an agent. I have found one application sufficient. But should they show themselves "in force" again, you must repeat the application. But be assured that every one you thoroughly wet will commit no more ravages.

BRIEF HINTS ON STRAWBERRIES.

BY REV. J. KNOX, PITTSBURGH, PA.

[A PHILADELPHIA friend of Mr. Knox's asked brief answers to the following questions. At our request he has obtained that gentleman's permission to their publication in the *Gard. Monthly.*—ED.]

Question. Soil—1 Heavy or light? 2 Wet or dry? 3 How often and deeply plowed?

Answer. 1 My soil a light limestone clay. 2 Not wet. 3 Once.

Q. Exposure—North or South?

A. I have all kinds of exposure with nearly equal success.

Q. Manure—1 Kind of? 2 When applied before planting? 3 When after planting? 4 Quantity before planting? 5 Quantity after planting?

A. 1 Well-rotted stable manure. 2 Previous autumn. 3 Autumn. 4 and 5 Depends on the soil and variety of Strawberry.

Q. Varieties for Planting—1 Best? 2 Second best? 3 Third best? 4 Most prolific and best adapted for profit in market?

A. 1 Triomphe de Gand. 2 Wilson. 3 (True) British Queen. 4 TRIOMPHE DE GAND.

Q. Planting and Cultivation—1 Rows, how far apart? 2 How far apart in the rows? 3 Best time of planting? 4 How often horse hoed? 5 What kind of implement used? 6 Where can it it be got? 7 Price of it? 8 How often hand wed? 9 How often are the suckers removed? 10 If planted in spring, when is the mulching put on? 11 What kind of mulching do you use? 12 If straw, do you cut it; what kind and quantity per acre, or what depth? 13 Price or cost of it? 14 Does the crop require cultivation if mulched; if so, how do you manure it? 15 Do you irrigate, and if so how often and when? 16 Do you mow off the leaves? 17 How long do you allow a bed to bear before you replant? 18 Can you use the same ground for the next planting?

A. 1 Two and a half feet. 2 Ten inches. 3 Spring. 4 Never. 5, 6 and 7 None needed. 8 As often as needed. 9 About once a month. 10 The next autumn. 11 Rye and Wheat straw. 12 Do not cut; use about two tons per acre, covering lightly. 13 From $4 to $7 per ton. 14 No cultivation except cutting off with the hand the weeds between the rows; no difficulty on account of mulching. 15 and 16 Never. 17 Ought to last ten years. 18 Would not advise to do so for a few years.

Q. Gathering—1 What kind of help do you employ in gathering? 2 Do you pay them by the day or by the quantity? 3 What do you pay per quart?

A. 1 Men, women and children; about two-thirds children. 2 By the day. 3 Never pay by the quart.

Q. Sending to Market—1 What do you send them to market in. 2 If in small boxes, where can they be got the best and cheapest? 3 Do you put the small boxes in large chests? 4 Price of small boxes? 5 Price of large chests? 6 What do you consider a fair average crop with careful and generous culture, and a good season?

A. 1 Quart and pint boxes. 2 Of Mr. Hallock, Queens, Queens Co., N. Y. 3 In crates at $20 per thousand. 5 My crates holding 48 quart boxes, costs me twenty cents, made here. 6 300 bushels.

DEATH OF JOHN EVANS, THE ARBORICULTURIST.

BY ORCHIS.

But one month has passed away since the description of the Evans' Botanic Garden was published, and it now becomes my melancholy duty to inform the readers of the *Monthly* of the death of the illustrious founder. As spring was approaching with her many bright floral harbingers, one of the most gifted and energetic of American Botanists has quietly passed away; but an enduring record of his love for the beautiful is clearly manifested in the splendid collection that surrounds his home.

As a botanist, John Evans was practical and thorough; never depending upon the theories of others, but investigating for himself. With a strong partiality for a few particular genera, he made these his study, and after having arrived at a satisfactory conclusion to his own mind, he cared not for the opinions of conflicting authors. The study of the hardy trees and shrubs, appeared to have been the branch of botany that interested him most, and in the pursuance of that object he has amassed a collection that probably cannot be excelled in the country, and certainly not by any private individual.

In regard to the changing of botanical names he was remarkably averse; and especially so when the standard authorities considered it best to reduce the number of species belonging to some genera, which in his judgment were sufficiently distinct. He persisted to the last in designating the *Negundo aceroides* as the *Acer negundo*, saying he believed with a noted author, that "*by their fruits shall ye know them.*"

Enthusiastic, and with a perseverance that nothing could overcome, he traversed the lakes at the north, in search of new treasures for the Kew Gardens of London, as well as to enrich his own private collection; and to his energy may be attributed many fine specimens in the English arboretums. His correspondence during this period with Sir William Hooker was frequent and interesting.

During the few last years of his life, he suffered from a disease of the lungs that often confined him to the house, but which could not abate the deep interest that he felt in his favorite study; and even when near the close of life, he appeared as greatly pleased at the prospect of procuring a new plant, as when enjoying perfect health. Quiet and unobtrusive in his manner, he spent his declining years in the enjoyment of his plants and scientific works, with which his library was so amply stored; and seldom could a man be found who possessed such a general knowledge on almost any subject that was broached, as he. With a wonderful memory he quoted from the different authors with an accuracy that rarely was at fault.

The soldier's or the stateman's death, so often eulogized in glowing words of eloquence by the historian, would not be applicable here; but if true, unassuming merit deserves a passing tribute, then, in the death of John Evans, we have an instance worthy of an abler pen than mine. That life which he so well spent in his favorite study, passed quietly away in the retirement of its bright reward; and should we all leave so glorious a memento of our industry behind us as he has, it would be a happy termination to a life well spent.

Beneath the shade of those trees which his own hands had planted, we laid him in his last resting-place, and whose enduring monument shall be those glorious gifts of nature that wave above his grave. No more beautiful or appropriate tribute could be devised, than those which he himself had placed there, as a fitting emblem of the pure love that he professed.

Years may pass away, and new characters appear upon this scene of action, but so long as those trees at least shall live, the memory of this distinguished botanist shall remain as fresh and green as they.

[We heard of the death of Mr. Evans with deep regret. Scarcely known to the public at large, he had yet a world-wide reputation with parties capable of estimating his worth. Some years ago the writer, then in England, offered to collect American seeds for the Royal Gardens, but was informed by Sir Wm. Hooker, through Dr. Bromfield, that they "were well supplied by Mr. Evans of Pennsylvania." A few years afterwards, being in the neighborhood, we enquired for Mr. Evans' place, but no one could direct us to it. At length, it struck one party who we were enquiring for, and he exclaimed, "Oh, you mean the Queen's botanist," and directions for finding the place were soon afforded. We found him just as our correspondent describes him. Some account of a few of the rarer trees, from notes taken at this time, are given in "Meehan's Handbook of Ornamental Trees."

Some years afterwards we made a call in company with one of our distinguished nurserymen. Our friend was so overcome by his generous warm-heartedness, and soul-stirring enthusiasm, that for some time, on returning homewards, he was taciturn, and thoughtful; at length he burst out as from a trance, "Many a dollar has that man paid me for trees from my establishment, but I can never take a cent from him again; whatever he wants from me shall freely be his."

Popularly considered eccentric in his religious views, he was nevertheless venerated for his good qualities. He seemed to adopt for his rule of conduct the maxim of the poet, that

> "—— where the power of doing good is equal to the will,
> The human soul requires no other heaven."

And surely, if to adorn and beautify this earth was worthy of Divine power, the humble efforts of his creatures to render all around them loveable and lovely, could not be received by him but as among the most acceptable of human sacrifices.

> "For he who blesses most is blest.
> And God and man shall own his worth,
> Who toils to leave, as his bequest,
> An added beauty to the earth."

Mr. Evans was another striking example of the influence a pursuit of science has on a hale and vigorous old age. We met him last fall, in the office of the *Gardener's Monthly*, suffering then. "Spring will have an influence on your recovery," we remarked. "No," said he, "not at my advanced age." We expressed surprise at the answer, not supposing him over 55, but he assured us he was 20 years older—78, if we remember correctly.—Ed.]

The Gardener's Monthly.

PHILADELPHIA, MAY, 1862.

☞ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box 406 Philadelphia."

☞ Persons sending two new Subscribers for 1862 in addition to their own, with $3.00, can receive a copy of our First Volume, (1859) free. All persons who have paid their subscriptions for 1862, by sending two new Subscribers and $2.00, can receive a copy of the same.

THE FRUIT-TREE BORER.

WE recently called on a friend who is famous for the success of his apple crop. He is no believer in the generally received opinions about "changes of climate" since the days of our forefathers, "wearing out of soil," "degeneracy of varieties," and the theories that are satisfactory to most people for their ill success; and we asked him for his "recipe" that we might add it to the number we have already on file.

"My plan," said he, "is simply to keep away the borer." "The borer," he continued, "weakens trees, and once weakened, the fruit drops before it is mature, or it cannot recover from the slightest injury that any insect inflicts on it; moreover the tree becomes sickly, and then insects prey on it; for they do not like healthy trees. Insects have an office in nature to perform, which is to hasten to decay what nature has intended to remove from living families,—just as worms soon take away the life of a sickly pig."

"Easy enough talking," observed a friend with us, "but how do you keep away the borer? Tobacco stems?" "No." "Lime?" "No." "Ashes?" "No, none of these." "Pray what then?" "Now you give it up, I will tell you. I merely keep the soil scraped away from the trunk down to the bare roots all the year round—summer and winter."

My companion laughed incredulously, if not contemptuously; "and," said he, "friend C. I have given you credit for better understanding, than to suppose any amount of freezing or roasting will kill a borer once domiciled within the trunk of the tree." "I do not suppose it will," he replied, "I have no such object. If I can ever find one in, I trust to my jack-knife or wire for his destruction, and not to heat or frost." This was a poser.

"What then is your object?" was the next enquiry. "It is to keep the borer out. Did you ever see the borer enter in the stem of the tree, at any height above the ground? No. And why? It requires soft moist bark for the purpose; and whenever you remove the soil, and render the bark hard and firm to the collar, the borer instinctively goes to other more favorable places for the secure raising of its young." "But will they not go into the main leading roots?" "I have found them to avoid these roots as if it were unfit to rear their young; in fact, I have never known them attack mine."

Nor had they; that was evident. A clean, healthful orchard—never cropped, annually top-dressed, grass kept away several feet from the stem, so that no insect could find a "cool and moist" harbor for its larvæ, and every success following. Certainly the borers did not attack these trees; and the novel reasoning struck us as so philosophical, that we have thought it worth recording in our pages, for further observation, and—for we want to be repaid for the suggestion—report in these pages.

IMPROVEMENTS IN GLASS STRUCTURES.

AT a recent meeting of the Pennsylvania Horticultural Society, a wire basket, lined with moss, and filled with soil, in which three strawberry plants were growing, was exhibited; and a six-inch pot, with another plant of the same age, and planted at the same time, was shown. The plants were grown in the same house,—the moss basket being suspended near the apex of the roof, and one foot nearer the glass than the one in the pot. In the basket, also, whalebone parings had been added to the soil, but none in the pot. The difference was very marked,—the one in the basket having its fruit mostly set, while the one in the pot had just opened its fruit blossoms. The exhibitor stated the one in the pot required water almost daily, while the ones with moss around the basket kept moist for a week; and as the water used in the house was but 45°, he attributed the slow growth of the pot plant to the frequent lowering of the temperature by *cold* watering. Some of the *luxuriance* of the basket plants was, no doubt, owing to their closer position to the glass, and to the whalebone parings, but the retention of heat, consequent on the less frequent cold waterings, was doubtless a great point, and suggests the necessity of always providing in plant houses—especially those destined for early forcing—conveniences for warming enough water for one days use. There is usually more heat about the furnace than is required for warming that part of the house, that could very well be permitted to be absorbed by the water with-

out any great loss. Even had extra fire to be provided for the purpose, we should regard it as good economy.

Another good hint is to have houses made as flat roofed as possible. Heat ascends perpendicularly, by the pressure of cold air, while at the same time, by its power of radiation, it warms all around, above and below it. A steep house is very hot therefore at the top, where heat is not wanted,—very cold below; where it might be useful,—and irregularly diffused. The evil is especially illustrated in Vineries, which, when steep, induce the grape eyes at the top, to burst before the others; and, once getting the lead, the most skillful can, with great difficulty keep an uniform vigor of growth above and below, and bending down the canes, and other "make shifts" have to be resorted to. In flat roofed houses this is avoided, and grapes break regularly all over the cane. The only disadvantage is that flat roofed houses consume more heat than steep pitched ones, as from the heat rising perpendicularly, there is more cooling surface of glass, to convey away the heat by conduction. One hundred square feet of glass, set at an angle of °45 degrees favors the retention of considerable more heat than the same surface set on a level plane.

For the same reason flues should be independent of the earth below, and as high as possible above it. If heat merely ascended, it would not matter, as all the heat would have to pass out by the top of the flue, but as it radiates also, and is absorbed by other substances on every side, flues should be as far from any other substance that would be unnecessarily heated, and as near to the matters we desire warmed as possible. All that is absorbed by the ground is so much loss to the house.

Then let the flues be as thin as possible. The same amount of heat required to raise a brick of about one hundred cubic inches to a given temperature, would heat two hundred cubic inches of air to the same degree. The denser the material the more heat it absorbs. It may be comfortable to hold ones hands two feet from the fire; but with a piece of iron two feet in length—one end in the fire, the other in our hands—the distance would be a little too close for comfort. A flue, four inches thick, that heats a house of two hundred cubic feet sufficiently, would heat one built on the same pitch with four hundred cubic feet, when the flue is but two inches thick.

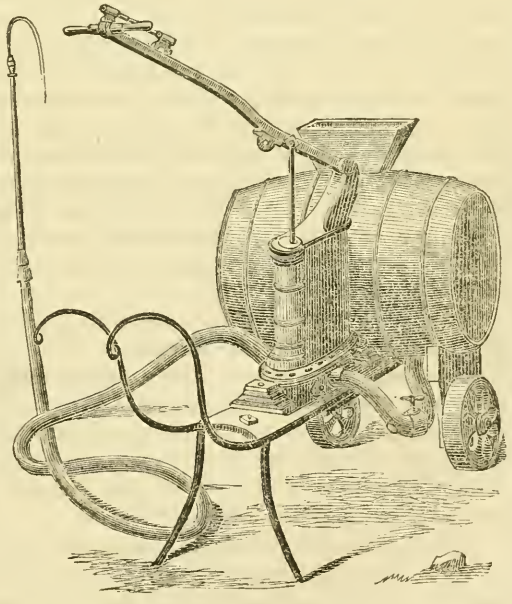
Houses cannot be built very flat when sashes on the old principle are employed. The heat escapes too rapidly from the crevices, and rain drips through moist annoyingly; but few use sashes now. Fixed roof houses are generally common. But fixed roof houses, being so very tight, moisture can not well escape, and, condensing, it will run down the astragals and make a constant and unpleasant dripping. This can be avoided by fluting the astragals with a plow, forming thereby shallow gutters, down which the moisture passes to the sides of the house.

Flat roofed houses must also be made somewhat stronger to guard against snow-drifts; but about this and other hints hereafter.

GARDEN WATER CARRIERS.

In whatever garden we may go, during our warm summer season, we notice the most antediluval contrivances for carrying water that one can conceive. Frequently nothing more than a barrel set in a wheel-barrow, from which half the water is spilled on the route.

In order to call attention to this subject, we give a sketch of a French machine that has come under our notice. It is somewhat complicated, and we are sure Yankee genius could much simplify the idea for us.



In our advertising columns, Mr. Harrison offers some articles in the same line, that would, no doubt, save many a dollar spent in water garden carrying, wastefully. Our object is to call attention to the want of simple and convenient water carriers, and shall be glad if any of our correspondents can suggest something of real improvement in this track, not generally known to Horticulturists.

Scraps and Queries.

☞Communications for this department must reach the Editor on or before the 10th of the month.

☞The Editor cannot answer letters for this department privately.

THE VINEYARD OF PETER LEGAUX ON THE SCHUYLKILL RIVER.—A correspondent last month inquired for some account of the Vineyard of this grape patriarch. No one has responded, but one has furnished us with a copy of its charter, which, as a matter of grape history, will possess sufficient interest to warrant giving it a place in our columns:

"Act of Assembly of Pennsylvania, passed March 22, 1793, entitled, 'An Act to enable the Governor of this Commonwealth to Incorporate a Company for the purpose of Promoting the Cultivation of Vines, and for other purposes therein mentioned.'

"PREAMBLE.—Whereas it hath been represented by Peter Legaux, that from actual experiments by him made, there is sufficient reason to believe that the cultivation of the vine, if properly encouraged, might be carried on with success, in this Commonwealth, and that several persons are ready and willing to enter into a subscription for the purpose of carrying on the cultivation of that plant, on a more extensive scale than has hitherto been attempted in this state, if the legislature would give them a charter of Incorporation. And, Whereas such an object is highly deserving the patronage and encouragement of the Legislature.

"*Sec.* 1.—By the enactment following, Samuel Miles, Tench Francis, John Swanwick, Timothy Pickering and Israel Whelen were appointed Commissioners to receive subscriptions to the stock of the said Company, who were to act as therein set forth, until the number of shares subscribed should amount to one thousand, on which $10 per share was to be paid at the time of subscribing.

"The second section provides that when 500 shares should be subscribed, the Governor should by Letters Patent create and erect such subscribers into one body politic, by the name, style and title of 'The President, Managers and Company, for the Promoting the Cultivation of Vines.'

"*Sec.* 6.—This, the last section, provides that the Act shall continue in force 20 years. And further, that if the said Company shall not, within three years, proceed to planting and carrying on the cultivation of vines, the said Charter shall cease."

"Supplement, passed March 7, 1800:

"PREAMBLE.—Whereas it hath been represented to the Legislature of this Commonwealth, that a sufficient number of shares of the stock of the intended Company for Promoting the Cultivation of Vines, to entitle the subscribers to Charter of Incorporation, has not been yet subscribed, and that they have not been able to proceed to the planting and cultivation thereof, by reason of which they have ceased to be entitled to the rights and privileges originally intended to be granted to them.

"*Sec.* 1.—Revives the Charter.

"*Sec.* 2.—Enacts that Samuel Miles, Timothy Pickering, Isaac Whelen, Benjamin Smith Barton, Benjamin Say, William Sheaff, Peter Stephen Duponceau, John Vaughan, B. H. Latrobe, Simon Chandron, Samuel Coates, Stephen *Gerard*, James Gibson, Samuel Wetherill and Casper Wistar should be Commissioners to procure such further subscriptions to said Company as would, with those already subscribed, amount to 1000 shares.

"*Sec.* 3.—Provides that if the said Company should not, within five years proceed in planting and cultivating vines, that it should be lawful for the Legislature to assume all and singular the rights, liberties, privileges and franchises granted to the said Company, otherwise the same should remain in full force and virtue, during and until the full end and term of 20 years from the date at which the Charter of Incorporation, in pursuance of this Act, should be given."

"Further Supplement. January 31, 1801.

"The Preamble recites, that it had been represented to the Legislature, by a Memorial from the Commissioners, that the principal obstacle to the success of their applications for subscriptions appeared to them to lie in that clause of the law which rendered necessary the payment of one-half of the amount of each share at the time of subscribing.

"For Remedy Whereof, it was enacted that it might be lawful for the Commissioners aforesaid to take and accept any sum under the amount for each share subscribed at the time of such subscription, so that the same should not be less than one dollar."

INSECTS ON OSAGE ORANGE—*G. R. B., Lewisburg, Pa.*, writes:

1. Are you aware of the ravages of a kind of aphis on the Osage Orange? I noticed on the hedges of two of my neighbors, last season, that the plants (about six years old) were strangely turning black, first the foliage then the stems, at

intervals in the hedge. The trouble seemed to spread from where it first appeared; and later showed on the stems specks and patches of a white, flosculent, cottony substance, as if resulting from the dying away of exuded sap. Careful examination made it evident that those plants were infested by millions of a dark brown aphis, which remains on them through the winter, and threatens, I fear. universal ruin to the Osage Orange here next sea- Are you acquainted with this pest? Is there any remedy for it?

2. Several years ago, I planted a hedge before my house, (following the advice of a celebrated nurseryman), of alternate privet and sweet briar. The briar was mainly depended on to give strength or security to the fence; for awhile it seemed to flourish as well as the privet. But when the latter became bushy and thick, the sweet briar gradually failed, leaving little besides the privet, which, although a beautiful and satisfactory screen, will not, I fear, be able ever to stand alone as a front fence, where the cattle are allowed to run at large. Do you think it will? If not, can you suggest any improvement, by adding other plants or otherwise, to make it available as a barrier without the protection of an outside fence?

3. Are the seeds or young plants of the Holly easily obtainable about Philadelphia?

[1. We have noticed a species of brown scale on Osage Orange hedges, very injurious to their general health, but have not seen the aphis our correspondent refers to. In either case the subject is worthy close attention, and we ask information from any our friends whose observations may have been already called to it.

2. Mixing roses and briars in hedges was once popular, but now abandoned as destructive to a perfect hedge. We doubt whether privet could ever be made strong enough to turn cattle, and we fear our correspondent's best plan will be to make an entirely new hedge of stronger material.

3. Seeds can be obtained either in Philadelphia or New York of Holly, through late fall, winter, and in early spring. Young plants are sometimes to be had in some large nurseries, but not often; nurserymen not having patience to raise them. They usually take two or three years to germinate, and then as much more before they are a few inches high.]

Which is the oldest Horticultural Society?—*Thomas Meehan, Esq., Editor of Gardener's Monthly,*—Dear Sir: Enclosed is a copy of an enquiry made in the early part of March last, but failed to bring a reply. Perhaps some of your readers can give the desired information.

Yours Respectfully, J. E. Mitchell,
Philadelphia, April 8, 1862.

[copy.]

"Will the Editor of the *Horticulturist* be kind enough to inform one of his constant readers whether the New York Horticultural Society is now in existence, and whether its organization has been kept up without interruption since it was founded in 1818?

Will the Editor be kind enough to give a reply to above in the April number of the *Horticulturist?*

And greatly oblige,
Philadelphia, March, 1862. J. E. Mitchell.

[We believe Mr. Mitchell was one of a committee who drew up the card to the "Friends of Horticulture" in the Schedule of the Pennsylvania Horticultural Society, in which it is said of this society, "it is the oldest Horticultural Society in the United States, having been instituted in 1827." The *Horticulturist* objected to this statement, asserting a claim in favor of the New York Horticultural Society, which induced the query above copied.

Our contemporary probably overlooked the fact that the Pennsylvania Society claimed only to be the oldest *existing* society. If the question was, where and when the *first* Horticultural Society was started, we still think that honor due to Philadelphia. It was called the "Philadelphia Horticultural Society," and established under a Charter granted by the State of Pennsylvania, in 1791. The declaration of the association was dated March 7th, 1811, and is signed by Bernard McMahon, Michael McArran, Samuel M. Thornley, Thos. Birch, Wm. Leeson, Christian Reinicke, Robert Hogg, Robert Tredger, John Scott, Francis Kearney, John M. A. Rann, George W. Hilton, Peter Hackett, John Davis, Robert McGarahill, Thomas Johnston, Nicholas Prescott and Daniel Maupay. This is seven years before the date claimed for the oldest of the several New York Horticultural Societies, and the oldest of any that we know of.]

Raising Blackberries — Dwarf Apple Stocks—*H. L. S., Provo, Utah.*—Paradise and Doucain stocks for Dwarf apples are raised by making cuttings of the roots of old plants, which, when made about three inches long, and planted out as cuttings in a warm border, grow readily. At page 24, in Vol. I., the process is minutely described. Lawton Blackberry is propagated in the same way.

Blackberry seeds should be washed from the pulp

as soon as ripe, and sown at once in sandy soil, in a place where the soil will never become dry, and they will appear in spring. If preserved dry till spring, they remain in the ground a season before growing.

The Cranberry can be raised from seed in the same,though it is best to employ boxes of loose peaty earth; cover the seeds very little indeed with soil, and cover the surface with coarse spongy moss, as an additional security that the surface shall not get dry. It must be watched, and as soon as germination commences, the moss must be gradually removed.

Hammonton, New Jersey.—A correspondent from Indiana asks, "to advise him whether to go to Hammonton." He has been told that "fruits of all kinds can be raised there." He further asks, "what do apples, peaches, and berries sell for in Philadelphia, and whether it will pay him to remove to Hammonton, to pursue horticulture and agriculture." All that we can say is that Hammonton is a tract of land about fifty miles from Philadelphia, of a sandy nature, and we believe of quite as good quality as any of the other sandy soils of New Jersey, on many of which it is well known that parties do live and pursue agriculture and horticulture at a profit. It requires of course a knowledge that will adapt itself to such soils, and of what peculiar things will do best in them. On all questions of profit, some will starve where others will make fortunes, and we do not feel competent to advise. Prices of fruit in Philadelphia market vary. Peaches have sold for 25 cents per basket, and at other times $2; and sometimes the growers will make more profit at 25 cents than they can at two dollars. Nothing can be made of these figures taken by themselves. We would advise our correspondent to go and judge for himself, before deciding to change.

Strawberries for Forcing—*J. J., Cleveland, Ohio.*—Will you please inform me in the May number of the *Gardener's Monthly* what are the best Strawberries for forcing. I have at the present time a hundred pots of the Wilson's Albany, a few Trollope's Victoria and Triomphe de Gand. The Wilson's Albany have thrown up fine trusses, and at present are full of bloom; and some have done blooming, but they will not come to anything. As these are the first I have tried in America, I thought perhaps they would not force, and should be glad to find out which are generally used for forcing. Can Keen's Seedling, an English Strawbery, be got in America; I know they will fruit, having fruited bushels of them. An answer will oblige.

[We were told last season, by a Strawberry raiser of repute, that Downer's Prolific was the best he had tried for forcing; and this season, some of this variety that we have seen, fully confirms this character. At the time of writing this (April 2), the plants are "loaded with half-ripe fruit. We notice however, that a portion of the plants bear pistillate flowers under pot culture, until nearly all are opened, when the last flowers are as perfectly hermaphrodite as those on the other plants; and that these plants are not near as productive as the others.

Some cultivators have success with Wilson's Albany. Keen's Seedling is scarce, if not entirely lost in this country. All that we have seen of late years as Keen's were Methven Scarlet. Even this is probably lost know.]

Cammellia A. J. Downing—*From J. C. Reilly, Brooklyn, N. Y.*—Did not arrive in good condition. Specimens of flowers should not be packed in dry cotton, but be first wrapt in soft paper, then encased in damp moss. But it was in sufficient good order to show its excellent qualities. It appears to have had Sacco for one of its parents, but is superior to any of the now known kinds of that class. The petals are thin, but well cupped, giving a less artificial appearance than most Camellias have. In color a soft rosy purple, paler towards the centre. To say that it looks like an immense Hermosa rose, accurately describes it.

It was raised by the late Noel Becar, Esq., of Brooklyn, and named by him in compliment to Mr. A. J. Downing, whom he, in common with the mass of horticulturists, highly esteemed.

A report has prevailed, that since Mr. Becar's death, another variety has, by some mistake, been sent out as Mr. Becar's A. J. Downing. We cannot trace this to any certain source, but as the writer had a bloom from Mr. Becan during his lifetime, of his A. J. Downing, we are enabled to say this is the one Mr. Becar intended.

Osage Orance Hedges—*J. C., Jonesboro, Ind.*—Osage Orange seed should be kept cool and slightly damp until sown, which should be after all risk of cold seems as over. If exposed to changes of temperature after the germ has pushed, it will rot. The best way is to sow in rows, about as thick and as deep as one would the garden pea,—transplanting them to the hedge row the following year. Your other enquiries the article in our January number will probably answer. If not entirely, let us hear again from you.

Salt for Asparagus—"*Vegetable*," *Baltimore, Md.*—We cannot advise you without knowing the nature of your soil. If the soil be sandy, use enough salt to make the ground barely white. If the ground be loamy, use much less; but, if the soil incline to be heavy, do not use salt at all—it will ruin your bed.

Black Apricot—*G., Union Bridge, Md.*—Enquires in reference to the article of P. in the September *Monthly*, Whether the Black apricot is in the trade? Do any of our correspondents know if it is anywhere for sale?

Dead Letter Notices.—Subscription received at the office from Mr. Jerry Flannery, "Windsor," no State named, and Postmark illegible. Letter sent to Windsor, *Conn.*, and returned. Where is Mr. Flannery?

Books, Catalogues, &c.

On the Uniformity of Relative Characters between Allied Species of European and American Trees. By Thomas Meehan.

[In the proceedings of the Academy of Natural Sciences for January, is the following paper by Mr. Meehan, which, as it may possess an interest to those who study the peculiar effects of trees in landscape scenery, we copy for our readers.]

To whatever principles the origin of species may be owing, the following observations tend to show that their respective differences are the result of one unvarying law.

Noticing that European willows, oaks and other trees retained their green leaves in the autumn much longer than closely allied American species growing near them, and that this could not be owing to immediate climatic influences, as *Gleditschia triacanthos*, *Robinia pseudacacia*, and other American trees, with no European representatives, possessed the same characters, I was led to believe it was rather the result of inherent specific peculiarities, which further investigation tended confirm.

It will be seen from the subjoined table, that on any positive difference being ascertained to exist between an American and a closely allied European species, the relative differences between all other closely allied species of the same differing geopraphical distribution are of the same character and nature.

For instance, the European Plane (*Platanus orientalis*) may be distinguished by a compactness of growth when compared with the diffuse habit of the American species, and the same compactness and diffuseness will be found to prevail in all the respective European and American species of other genera.

The nut of the European Chestnut (*Castanea vesca*), is characterized by large size; the American (*C. Americana*) is much smaller, and the seeds of all allied European and American species bear the same relative proportions; and so of other characters that I have compared, and which I may enumerate as follows:—

1st. *Color and persistency of the leaves.*—In which the American species change to some brilliant hue, and fall comparatively early, while the European co-species fade black, and are retained to a later period of the season.

2d. *Outline of the leaves.*—In which the American species have the leaves less lobed, less deeply toothed or serrated, less in width in proportion to their length, and less petiolate than the European species.

3d. *Size of the seeds.*—In which the American are smaller than the European.

4th. *Habit of growth.*—In which the American is more diffuse, has much fewer branchlets, and more vigorous main branches, and the outline more irregular and informal than European trees.

5th. *Size of the buds.*—In which the American have smaller ones than the European, and usually set at wider spaces between the nodes.

The observations finally made were taken at Germantown, Pa., during the first week in November, 1861.

European Species.	*American Species.*
Larix Europæa,	Larix Americana.
Quercus robur,	Quercus alba,
" cerris,	" macrocarpa,
Betula alba,	Betula populifolia,
Populus tremula,	Populus grandidentata,
" dilitata,	" Caroliniana,
Morus alba,	Morus rubra,
Euonymus Europæus,	Euonymus atropurpureus,
Spiræa salicifolia,	Spiræa carpinifolia,
Berberis vulgaris,	Berberis Canadensis,
Carpinus betulus,	Carpinus Americanus,
Cornus sanguinea,	Cornus sericea,
Ulmus campestris,	Ulmus Americana,
Corylus avellana,	Corylus Americana,
Alnus glutinosa,	Alnus serrulata,
Castanea vesca,	Castanea Americana,
Pyrus malus,	Pyrus coronaria,

European Species.	*American Species.*
Tilia Europæa,	Tilia Americana,
Ulmus montana,	Ulmus fulva,
Fraxinus excelsior,	Fraxinus acuminata,
Cerasus padus,	Cerasus Virginiana,
" mahaleb,	" serotina,
Fagus sylvatica,	Fagus ferruginea,
Cercis siliquastrium,	Cercis Canadensis,
Celtis australis,	Celtis occidentalis,
Platanus orientalis,	Platanus occidentalis,
Acer platanoides,	Acer saccharinum,
Juglans regia,	Juglans nigra,
Cratægus oxyacantha.	Cratægus cordata.

In the *first* of the points to which attention has been directed, the only exception appears to be in *Larix Europæa*, which drops its leaves at near the same time as the American, and, unlike all the other species named, exhibits in fading the same tinted leaves.

In *point* 2. *Fagus ferruginea* has a more strongly toothed margin than the European *F. sylvatica;* but it is also worthy of note that the leaves of the English species are more coriacious than the American, which may have checked the prolongation of the nerves forming the teeth in the latter species. If there is any difference in the consistency of the leaves, it is usually in favor of the American species.

In 3. *Quercus cerris* has smaller acorns than *C. macrocarpa*, but it is the most distantly allied species brought into comparison.

In 4. I know of no exceptions.

In 5. In some few instances the buds of European species appear to be no larger than the American, and in still fewer instances seem smaller; but the rule holds good so generally as to form a striking and prevailing character.

It is proper to remark that the observations were taken from allied species that I have been able to find growing in proximity to each other, and in as similar circumstances as possible. This is very important, as, to a limited extent, circumstances have an influence in the variation of characters. For instance, *Quercus alba*, when growing in the full light and unsurrounded by other trees, has its leaves much more deeply sinuated than when growing in a mass with others. Lack of attention to this fact would make standard botanical works in some instances seem to oppose the conclusions I have arrived at. As an example of this, Michaux figures *Fagus ferruginea* with larger fruit than *F. sylvatica*, and the leaves of *Juglans regia* as less serrulate than those of *J. nigra*, neither of which agrees with my experience of plants grown near each other in this climate, and is probably, if not altogether an error in drawing, to be accounted for by the supposition that the sketches were made from specimens growing under widely diverant circumstances.

The species employed in the comparisons are not in all cases the nearest that might be had. *Pyrus baccata*, for instance, would be a much better match for *P. coronaria*, than *P. malus;* but they were the best my facilities afforded me. Some allied trees could not be compared in all points, and were therefore left from the list. *Æsculus*, for instance, had shed its leaves at the date given,—too early for comparison in persistency of foliage; but in points 2, 3, 4 and 5, the differences between *Æ. hippocastanum*, on the European, and *Æ. flava*, on the American side, agree with other species of the genera named.

The observations are perhaps too limited, in the absence of more extensive examinations of other characters and other plants, to *establish the fact* that, whatever may be the principle governing the origin of species,—whether it be by "progressive development," "natural selection of physiological advantages," or by "special and continuous acts of creation,"—it is in conformity with one regular and uniform law; but their tendency is so evidently in that direction, that I submit the facts for more general investigation, in the belief that it will prove a novel and interesting branch of study in Botanical Science.

CATALOGUES.

McElwain & Bro., Springfield, Mass. Seeds, Roses, &c.; very handsome, full and complete.

W. Corse & Son, Baltimore, Md. Wholesale list Fruit and Ornamentals.

Frost & Co., Rochester, N. Y. Complete set of all their extensive departments.

Andrew Bridgeman, New York City. Greenhouse and Bedding plants.

Heffron & Best, Utica, N. Y. Seeds, including the Prairie flowers advertised in our last.

A. S. Fuller, Brooklyn, N. Y. Fruit and Ornamentals. Got up with much taste.

G. Goldsmith & Co., Indianapolis, Ind., Fruit and Ornamentals.

Buist & Son, Philadelphia. Trees and Shrubs.

Spooner & Parkman, Jamaica Plain, Mass. Ornamentals.

Emile Pocsche, Normandy, Mo. Choice Grape Vines and Greenhouse plants.

J. A. Simmers, Toronto, C. W. Garden, Agricultural and Flower seeds.

Ellwanger & Barry, Rochester, N. Y. Green

and Hothouse and Bedding plants. 27 closely printed pages.

D. R. Good, Williamsburg, Pa. Small Evergreens.

J. W. Curtis, Auburn, N. Y. Trade List.

Lewis Ellsworth & Co., Naperville, Ills. Fruits and Plants; 55 pages.

J. F. Weber, Hammondsport Wine Co., N. Y. Grapes and Wines.

C. F. Erhard, Ravenswood, N. Y. Trade List.

Prince & Co., Flushing, N. Y. Strawberries.

New or Rare Plants.

New Texan Grapes.—Among the new plants recently described by Mr. Buckley, in the proceedings of the *Academy of Natural Sciences*, are three new grapes. We omit the mere scientific characters, and give only the popular account Mr. B. furnishes with the descriptions:

Vitis monticola.—Leaves 1½–2 inches long, and nearly of the same width; petioles about an inch and a half in length. Fruit ripe in July and August, ¾ of an inch in diameter, skin thin. Grows in the mountainous districts of Burnet, Bell and Hays Counties.

Vitis Linsecomii.—This grape has larger leaves than any other American species; 6–10 inches wide and of nearly the same length. Its fruit ripens the first of July; skin thin, and berry ¾ inch diameter, juicy and of a pleasant acid taste.

Vitis mustangensis.—This is called the Mustang grape in Texas, where it is very common. It makes an excellent wine; but is little esteemed for eating on account of an acrid juice beneath the skin, which, if swallowed, gives a burning pain in the throat. It climbs high, bears abundantly, and has large fruit, which is sometimes nearly an inch in diameter. Its leaves are either toothed or mucronate.

Abies alcoquiana—*Mr. Alcock's Spruce Fir.*—Among the Conifers that have been sent home by Mr. John G. Veitch, is one which he has named in honor of Mr. Rutherford Alcock, Her Majesty's Minister at the Court of Yeddo. It is said to be "a noble Spruce Fir, in some respects resembling the Abies potita of Zuccarina, from which it differs in having much smaller cones, with scales of a different form, very small leaves, glaucous on the under side, blunt or emarginate, not mucronate, and flat, not four-sided.

Mr. Veitch found this on Mount Fusi-Yama, at an altitude of 6000 to 7000 feet. The tree is 100 feet to 120 feet high, and the wood is used for light house work.

New Double Clarkia pulchella.—Last year we introduced to our readers' notice the Double Zinnia, and it has proved well worthy of the illustration we gave. We now give a sketch of another beautiful double annual, recently made known in England, which we have no doubt will prove equally popular here. Clarkias should be sown early, and not in too dry or hot a place.

New Japan Plants.—In a notice of a London Nursery, the *Gardener's Chronicle* says:

"We also noticed some strong plants coming on of Lilium Fortuni, the showy yellow-flowered species alluded to at p. 166, and some other Liliums, among which was one related to L. speciosum, and said to produce immense spotted blossoms. A beautiful little variegated Saxifraga, related to sarmentosa, in which the leaves were charmingly marked with irregular sections of a clear soft flesh-color, Mr. Fortune had brought over "by hand," so precious was it esteemed to be; and although as yet only in a very juvenile state, it appears as though it would be really an exquisite addition to the now popular group of variegated plants. Mr. Standish has also from the same source, upwards of a dozen Japanese varieties of Chrysanthemum, among which are some belonging to the odd-looking groups which we figured last year, and one is said to have the florets handsomely striped. The plants are in a healthy and vigorous condition, so that in the ensuing autumn we shall see them in a flowering state.

The *Botanical Magazine* for March contains figures of—*Stanhopea oculata*, one of the pale-colored forms. *Iochroma grandiflorum*, a purple tubular-flowered Solanaceous stove shrub, with coarse foliage, synonymous with I. Warcewiczii. *Ligularia Kæmpferi aurco-maculata*, which name Sir W. Hooker adopts for the garden Farfugium grande, of which it is remarked:—"It is far from being a new species or a new genus; it is a native indeed of Japan, and seems to have been known to all botanical visitors there from the days of Kæmpfer to the present time." Another Japanese species, L. gigantea, produces leaves "from 5 to 18 feet long, with the blade 5 feet in diameter." According to Siebold, a tuft of this latter species, which he introduced to Belgium some 30 years ago, is represented in the album of the Japanese court artist, Hoksai, as sheltering many gardeners from the rain with its ample leaves, which are always radical. *Dendrobium Lowii*, the beautiful yellow-flowered Bornean species. *Anguria Warscewiczii*, a novel form of the Cucumber family, a stove climber, producing its "brilliant scarlet flowers in the depth of winter." The leaves are trifoliate, with the lateral leaflets semi-hastate, and the flowers, of which the males only are known, grow in short dense spikes at the end of a long axillary petiole. The five calyx segments are thickened into gland-like knobs.

Rare and New Fruits.

York Imperial Apple.—Messrs. E. J. Evans & Co., York, Pa., send us specimens under this name, enquiring if it can be recognized as any known variety. We cannot, nor can any of our pomological friends who have seen it; and we believe it to be distinct from any described variety.

It is a large and showy fruit, and at this date, (April 20th), as juicy as the best apples of the early Winter season. If it had a little more richness, it would be second to none of any season, and as it is we deem it one of great value.

The Banner Apple is said to be a variety of Siberian Crab, raised at Fishkill, New York.

Dana's New White Currant.—Is a new variety, raised in Massachusetts, said to be superior. Drawings we have seen represent the bunch as long and tapering, with large berries, nearly as large as the Versaillaise.

Blooming Orange Apple.—Mr. W. G. Waring, author of a work on Fruits, and excellent authority, writes favorably of this variety in a late *Country Gentleman*. He says:

"It came from Herefordshire, England, with the provincial name of Blooming Orange, and the suggestion that this may have been a corruption of *Blenheim Orange*. It is believed not to be described in any American catalogue of fruits, excepting a note in the Fruit Grower's Book, 1851.

"It is a magnificent fruit, either as seen on the tree or in single specimens. It bears uniformly large fair fruit in "ropes" and masses, hanging well till fairly ripe; and no variety of any season excels or equals it in beauty of form and richness of deep coloring (orange ground. darkening into shades of claret and purplish mahogany). It is a grand, regal-looking apple. The eye is clear and open, the outline symmetrically round oblate. The Ribston Pippin is the nearest apple I know to a counterpart in appearance, and the Dutch Mignonne in crisp texture of flesh, and in sharp acidity which in our Blooming Orange, however, becomes rich and mellow, and the abundant juice, is flavored at maturity with what some liken to a "sort of wine," and others describe more nearly as an Antwerp raspberry flavor. It is the first choice with old and young.

New Pine-apple.—The new Pine, called from the province in Brazil where it is found, Abachedies,

has been sent to Raby Castle, and is one of the greatest acquisitions to this class of fruits.

The fruit is a perfect cone, the pips large, their color at the base deep crimson, shaded off to dark orange; the flesh is deep yellow, very juicy, and tender, and in flavor cannot be surpassed. It is a dwarf grower, and possesses the good property of keeping some time after being cut. Those who have had an opportunity of seeing the fruit pronounce it first-class. Average weight 6 to 8 pounds.

Domestic Intelligence.

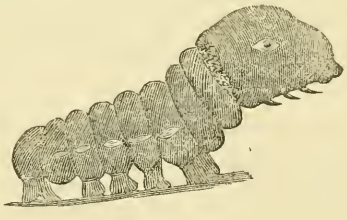
Conservatory in the Central Park.—The Central Park Commissioners, on Friday, contracted with Messrs. Parsons & Co., of Flushing, for the construction of a grand conservatory, the largest in the United States, upon the Park grounds. The building is to be a "Crystal Palace," of iron and glass, 200 feet long, 70 feet wide, and about 50 feet high. Its base will be a parallelogram, and there will be three stories, curving inward like the successive folds of a turban. The conservatory will front Fifth avenue; its centre being opposite 74th street; and directly in its rear will be a beautiful little pond, with walled sides of a symmetrical shape, which will be built during the coming two years. When the Fifth Avenue is graded to its proper height, it will be on a level with the second story of the proposed conservatory; and the main entrance to the edifice will therefore be on that story. Stairs and balconies will give access to every portion of the building. The contract provides that the grantees must erect the building entirely at their own expense, after the plans already agreed upon; that they must place in it nothing but flowers or rare trees or plants; that they shall be allowed to sell bouquets, etc., to visitors; that the public shall always be admitted free; that good order shall always be maintained inside, at the expense of the grantees; and that the work shall be completed by the first of January, 1864. The specifications of the contract are minute, and are believed to cover the objections which might be made to the granting of a monopoly of such a character. The grantees on their parts, agree to pay a rent which will add considerably to the revenues of the Park. The conservatory will cost about $50,000.

Strawberry Wine.—Mr. Charles D. Bragdon writes to the *Rural New-Yorker*, that E. Sims, of Broome county, Indiana, informs him that he has had great success in making wine from strawberries. He states that he "realized full *six hundred dollars net profits from not over half an acre* of land in strawberries." He states that he has sold the wine readily at $2 50 per gallon. He has forty acres in strawberries in Illinois—eighteen of which are in the southern part of the State, for an early market—and intends to make from seventy-five to a hundred barrels of wine the coming season.

Good's Budding-Knife, is a new improvement by which the longitudinal and cross cut, as well as the lifting of the bark from the wood, are all done by one stroke of the blade, thus saving two-thirds of the time usually spent on that part of the work.

Diana and Mead's Seedling Grape.—The President of the Missouri State Horticultural Society, as reported in *Prairie Farmer*, says, "Mead's Seedling promises well as a table grape. The Diana I do not think much of." He does not seem to be aware that it remained a seedling three years, without fruiting, at Lowell, Mass., and is therefore "no doubt, Diana under a new name." We expect our Massachusetts contemporary will be astonished at the obtuseness of the President's intellect.

A New Enemy of the Grape-vine.—Jacob Stauffer, Esq., the well-known Entomologist, of Lancaster, gives the accompanying sketch of a



newly discovered depredator of the Grape-vine, which he says was found in the act of cutting off entire bunches of native grapes, in Lancaster Co., in the month of July, 1861.

Mr. Stauffer says this caterpiller belongs to the genus *Papilio*, which produces a tribe of day-flying swallow-tailed butterflies. He styles it "a dangerous species, undescribed before." It certainly is a fearful looking monster. How we are to protect our vines against these destructive vermin has not yet been discovered.

Sowing Flower Seeds.—Messrs. Curtis & Cobb, of Boston, recommend choice seeds to be sprinkled over the ground and gently pressed into the soil, and should the weather prove very dry, a thin layer of damp moss or bass matting ought to be placed over

them till they germinate, when care must be taken to have it removed. There are few seeds, they add, that require such extreme attention.

Fruit in Chicago.—The *Prairie Farmer* has an article showing the astonishing magnitude of the fruit trade of that city. One propeller alone brought the past season from St. Joseph's Michigan, 27,010 boxes and baskets of peaches, and, besides this, sailing vessels left that port daily, loaded with this choice fruit for that city and Milwaukee.

Apple Culture.—The practice of *not* tearing up the surface-roots of fruit trees, but giving full annual top-dressings instead, which we took occasion to recommend in the first number of the *Gardener's Monthly*, seems gradually winning its way to general favor, if the reports of the various fruit conventions afford a good index to popular feeling.

One of the latest illustrations of the soundness of our advice, is given in the *Lewistown* (Me.) *Journal*, where the great success of Mr. J. N. Richardson, of Greene, is recorded. He never roots up his trees, but rather encourages fibres at the surface. To this end he top-dresses with vegetable refuse. At the present time it is a foot deep under his trees, and the innumerable roots through it make it like a huge mass of sponge. Last year the New England orchards produced but about 10 per cent of their average crops; but in Mr. Richardson's orchard there were as many apples as in the whole of the other orchards of Greene Township together.

Fire from Steam Pipes.—Fire Marshall Blackburne, of Philadelphia, is inclined to believe that steam-pipes, as well as hot-air flues, will in time char wood-work near them sufficiently to induce spontaneous combustion.

The Peach and its Cultivation,—Twenty-five years ago, there were no finer peaches brought to any market than were sold in the markets of Baltimore from the splendid orchards of Cromwell and Somerville. But now the peaches offered for sale bear no comparison to those upon which our citizens were wont to expatiate with so much delight, and to purchase moreover, at a cost per bushel frequently less than one-third the price which such peaches would now bring.

A similar complaint of the decadence of the Peach is made in New Jersey.

The failure of the peach may be ascribed to two causes:—First, a modification of the climate and the serious injury inflicted upon the orchards by late frosts; and, Second, to the exhaustion of the soil, which has deprived the peach of its necessary aliment, and has so weakened its vitality as to make it an easy prey to that scourge of the Peach-grower—the yellows.—*Rural Register.*

Sugar Grass of California.—The Indians of the Sierra Nevada region, press and boil down the juice of a native grass, and manufacture from it sugar and molasses. The *Scientific American* justly remarks, that this grass may yet furnish the State with all the sugar it requires. Can any of our Pacific readers give us information as to what species of grass the subject has reference to?

Reform Schools of Horticulture.—Mr. N. B. Bateham makes an excellent suggestion in *Field Notes*, to the effect that Schools of Horticulture, in connection with Reform Schools for Juvenile Delinquents, would be much more reformatory, and consistent with juvenile labor, than any measure that could be adopted.

Inarching.—Among the novelties at Mr. Lawrence's was *a pear tree with endless limbs*—i. e. with every limb inarched. Some of the limbs were bent around and ingrafted upon themselves, others were ingrafted upon the trunk, and in several cases, the ends of two limbs had been ingrafted upon each other. Being thus prevented from making a free growth of wood, the whole energy of the roots was compelled to the task of perfecting the fruit. The tree had not, as yet, fruited, but the large and well-formed fruit buds gave promise of success in the novel experiment.—*N. E. Farmer.*

Poison in Potatoes.—The shoots of potatoes exposed to light contain solanum—a powerful poison. The tubers of potatoes which are covered with earth from the light never contain this poison, but if exposed when growing they become green on the skin, which is a sign that this poison has been developed in them. On no account should green potatoes be given to persons or animals.

Clivea miniata.—An Albany correspondent of the *Horticulturist*, finds a bulb of great beauty, flowering three times a year.

Northern Turpentine.—A correspondent of the Philadelphia *Ledger* directs public attention to the pine forests of New Jersey and Pennsylvania, from which to obtain a supply of turpentine. He says:—"The mode pursued for obtaining 'the juice,' of white or common turpentine, as it is

called, is as follows:—A reservoir is made in the trunk of the tree, a few inches from the ground, capable of containing two or three pints of liquid. Into this, which should be prepared in the winter season, the juice will commence to flow early in the spring, increasing in quantity with the summer heats, and subsiding with the autumn. As the reservoir becomes filled the liquid is transferred to barrels, where it gradually thickens and becomes a soft solid. From this the spirits are distilled, and the residue, as is well known, is common rosin"

White Varnish.—Take one ounce of pure Venice turpentine; mix well with two ounces of pure spirits of turpentine; warm in a large bottle. In another bottle, put four ounces of best fir balsam (it must be pure), with two ounces of 95 per cent alcohol; shake each bottle well frequently for six hours or more, then mix both preparations in the large bottle. The whole should stand several days before using in a warm place.

Foreign Intelligence.

Dr. Mackay, Author of the "Flora of Ireland," and whose name is associated with so many familiar plants, died recently in Dublin, aged 87 years.

Death of Blume and DeVriese.—These two Dutch Botanists, whose names, in connection with cultivated plants, are as familiar as household words, recently died at Leyden, within a few days of each other, at advanced ages. Together in life, they explored the Islands of Java, Sumatra, and other Dutch possessions, in the Eastern archipelago; and to their enthusiasm in the cause of science, are we indebted for many of the handsomest introductions to our Hot-houses of modern times.

Dr. Vander Bosch, a celebrated Botanist, whose works amongst Ferns have made him famous, and to whom *Œschynanthus Boschianus*, and other plants, have been dedicated, has recently died in Holland.

Thomson's Early Muscat Grape, in some experiments at Chiswick, has been found six weeks earlier than Muscat of Alexandria. The Bowood Muscat is somewhat earlier than the M. of Alexandria also.

Apples as a Dye.—A correspondent of the *London Gardener's Chronicle* says the recent report abo this "New use for Apples," is "only a joke."

Cocoa-nut Dust.—This is a most valuable material to mulch the soil of strawberry beds; to fill trenches in which cuttings are to be planted; to mix with peat and turf, for ferns; to dust the surface of seed-pans and cutting-pots, to prevent damping; to encourage the formation of roots of every kind, either of seedlings or cuttings. It is always moist, never wet, continues in the same state for years without rotting, and no insect will harbor in it.—*London Gard. Chronicle.*

The Raspberry.—The fruit of the Raspberry is produced upon suffruticose stems, which spring from the ground either in the same or the previous year. In most of the kinds it is produced upon lateral shoots, which are borne by the previous year's canes. This fruit shrub differs from others of its class in the stems not being persistent, but only of annual duration. They are of an herbaceous rather than a shrubby character. The object of the cultivator should be to get these annual shoots as strong as possible; and, as a multiplicity of suckers are thrown up by all the kinds (but the true yellow Antwerp, which propagates with great shyness), they must as soon as they can be seen, be reduced to two or three shoots, which are to form the canes for next year's crop. Care must be taken to secure them from the action of the wind by securing them to stakes, and whenever the preceding year's crop of fruit is over, the removal of the old canes will be an advantage to the young ones. Two or three canes may be tied to a single stake, at the distance of five feet each way. This distance may startle the amateur, but where it can be given, it is a decided advantage; and those who cannot afford so much must bend to circumstances and do with less. At the time of the winter pruning the points of the shoots may be shortened a little, and fresh stakes put to them, which completes the process for the season.

The formation of the flower-buds may be retarded, and a late crop of fruit obtained by cutting down some of the shoots to within two or three eyes of the ground. New and vigorous shoots will be produced from the eyes, which will not form their fruit till later than the others, and thus the season of this desirable fruit may be much prolonged. The Double-bearing is a valuable kind, and should have the canes of the alternate stools cut down to two or three eyes annually. They will thus give fruit almost till Christmas, in mild seasons. The finest fruit is in all cases produced upon the strongest and best-ripened canes. Full exposure is therefore necessary

to obtain these, and single rows will, on this account, always be found most productive.—*Journal of Horticulture.*

Wearing out of Varieties.—Observing that such a fruit as the Golden Pippin, thought by some theorists to be worn out, can thus be renovated by giving it a genial climate, one is almost tempted to advance the opinion that for the last 150 years there has been a change and a lowering of temperature in our climate, too slight to be correctly ascertained by meterologists, because the mean temperature of of the year may not differ to any great extent, yet enough to affect vegetation to some extent, although our summers may be cooler.

According to Langley, who wrote in 1727, the Nutmeg Peaches, sorts which are still well known, ripened the last week in June (allowance being made for old style, in which he gives his dates) against a south wall, and, the Noblesse Peach, which he correctly describes, August the 2d. In an orchard-house in a sheltered situation, I have never known the Nutmeg Peaches to ripen till the third week in July, nor the Noblesse till Sept. 2. The season of many other kinds of fruits was then (120 years since) much in advance of what it now is, so that to the gradual lowering of our temperature we probably owe the tendencies to disease in many of our old kinds of fruits, for if the trees are suffered to grow unchecked, and to root deeply into the soil, canker in Apple and Pear trees makes its appearance, and the trees can only be kept in health when planted away from the influence of walls, by keeping their roots to the surface, so as to be influenced by sun-heat, now apparently less powerful in summer than it used to be in our climate a century or since.—T. Rivers, in *London Gard. Chronicle.*

"Frigi Domo," so often alluded to in the English periodicals, is a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of heat and cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving fruits and flowers from the scorching rays of the sun, from wind, from attacks of insects, and from frosts.

Cotton in Australia.—Experiments made last year by Mr. Walter Hill, in charge of the Botanic Garden at Brisbane, show that cotton can be raised there with the greatest facility.

Peculiarities of Plant Disease.—It is remarkable how some diseases follow a certain course in the removal of plants. In a recent number of the *Gardener's Chronicle*, Mr. Murray notices that seeds of Abies nobilis, ripened in England, produce diseased seedlings, while those introduced from abroad bring forth healthy plants.

Cochlearia acaulis.—Tufts of this in pots occupied the shelves of a cool house. To the value of this little hardy plant for winter decoration we have directed attention on former occasions. In open borders, when once established, it re-sows itself, its tiny stems and little pale blue starry blossoms, scarcely rising higher than the surface of the soil in which the plants are growing. Pieces lifted and potted, blossom freely for a long time, and that with scarcely any trouble or attention.—*Kew Cor. Gard. Chronicle.*

Chronolggy of Strawberries.—*Elton Pine* was raised by Mr. Knight, about 1819, and was distributed by the Horticultural Society. *Eleanor* was sent out by Mr. Myatt in 1847, and *British Queen* in 1841. *Cole's Prolific* was sent out by Mr. Cole, of Wellow, near Bath, in 1846. *Grove End Scarlet* was raised in 1820, by Mr. Atkinson, of Grove End, near London, and we believe, distributed by the Horticultural Society.—*Cot. Gardener.*

Paris Garden of Plants.—It is in contemplation to enlarge the Jardin des Plantes, in Paris, by adding to it the ground on which the Halle aux Vins now stands, which would make the garden one of the largest of its kind in the world.

Sporting of Ferns.—Dr. Lindley says British Ferns "sport," and produce so many "monsters," which seem to have the power of again reproducing themselves from spores to an extent that is scarcely credible.

Solution for Preventing the Attacks of Insects on Dried Plants.—Two drachms of corrosive sublimate to a pint of rectified spirits of wine, with a little camphor; apply with a camel-hair pencil, when the specimens are perfectly dry. It is best done before the plants are attached to the paper, as the spirits sometimes extracts a dye and stains the paper. Mix a few drops with the gum or glue used for sticking the specimens.

Pyramidal Pelargoniums.—The *Cottage Gardener* recommends that, instead of the wide bushy form usually adopted, pyramidal (conical?) shapes should be employed. They require more skill to grow this way, but are much more beautiful.

Glycine or Wistaria magnifica.—A correspondent of *Revue Horticole* says, this was raised in Paris, from seed of W. frutescens, and praises it as a splendid addition to hardy climbers. It has flowered in America, and proves one of the most beautiful of new plants.

Tree Violets.—To form these, take runners of the double purple and white violets; pot them, and as they grow, carefully pick off all side shoots or runners, until the stem has attained the desired height. Turn them out of doors the moment they have done flowering, in a shaded place, until November; frequently water overhead, as they are much subjected to red spider; and when taken into the greenhouse give them an airy situation, they cannot bear confinement.

Pimelia decussata.—These favorites of the greenhouse are natives of New Holland, and require the treatment usually given to New Holland plants. The soil should be sandy fibrous peat and fibrous loam, with a plentiful admixture of nodules of charcoal, and good drainage. P. decussata is an early bloomer, and we have happened to have it in bloom on the 23d February, in a warm greenhouse. But spectabilis and Hendersonii are much better. Pimelias are of very little use in small collections, as their colors are neither rich nor striking. To make the best of them, young plants should be frequently stopped to make them bushy.—*Cottage Gardener.*

Erfurt Cauliflower.—The *Bon Jardinier* says this is the earliest all.

Æsculus rubicunda, of Loddiges, is said to have been raised at the *Jardin des Plantes*, at Paris, from a seed received by Michaux from America.—(See *Le Bon Jardinier*, 1859, p. 864.)

None of our botanical authors make any mention of it, and we do not believe it is an American tree. We think it is rather a hybrid between the English Horse Chestnut (*Æsculus hippocastanum*), and our Scarlet Buckeye (*Æsculus pavia.*) In color of the flower, and absence of viscidity on the buds, it favors the latter, and in other respects the former.

It is, at any rate, one of the handsomest flowering trees in cultivation; and only its high price, (all the trees having to be grafted) we presume renders it so little known. It frequently flowers the third year from the graft, so that one has not to wait a quarter of their lives to see a flower, as is the case with many species of the family.

[Foreign Correspondence.]

NOTES UPON THE HORTICULTURE OF SCOTLAND IN THE YEAR 1861.

NO. III.

BY E.

As drawing comparisons often give offence, I will avoid them, but no liberal person will be offended at truths. All towns and villages are elegantly adorned with gardening embellishments, and even cots, by the way, have their window jams garnished with the yellow Nasturtium and a large, hardy Fuchsia, one side, and a pink Daily rose on the other; *that is universal.* Houses that stand back off the roads have neat flower-gardens in front, constant in bloom and kept as clean as a new ribbon; those close upon the streets have their second story windows decorated with flowers. Boxes, the width of the windows, eight inches deep, planed and painted, are screwed to the window frames; next a foot upon the sills and project a foot, and are filled with plants in pots, that bloom the whole growing season, and give the towns a gay look. The back yards are from a sixteenth to an eighth of an acre, enclosed with hedges of Hawthorn, Privet and Beech, as soil and location suits; they are clipped twice a year, kept five feet high, and never need repairs. The walks run along side the hedges, so their roots do not injure the crops, nor are they disturbed with the spade in digging. Every family has a manure hole, four feet square and as many deep, where ashes, soapsuds, cleanings of pig-sty and garden are put in. Working people's children are out in the mornings and evenings gathering horse and cattle droppings upon the public roads for a mile both ways, and carry them home in small wheelbarrows, for the gardens; their industry begins with their active lives. The men have a thousand times greater pleasure in the culture and crops of their gardens than they could have in drunkenness and brawling; and their wives shun *schools of scandal* to deck their homes with flowers. Their spare pennies go for seeds and plants. The laboring man speaks of his fine vegetables; the tradesman grows small fruits, and others delight in the culture of Bulbs and *Florist Flowers*, and can rhyme over their names as fluently as a shoopkeeper does his wares. A step higher, and there are fruit trees, flower-beds and greenhouses.

Cupar, in Fife, looks as if built in a garden. Pear trees are numerous, thrifty and very fruitful. At the east end of the town, and in front of the Royal Hotel, kept by Mr. John Buist, is an open, flat meadow, through which runs the River Eden. It can be flooded at pleasure. It is kept dry in sum-

mer, and used as a public bleaching green and playground; in winter it is flooded, and when hard frozen it is used as a *Curling Pond*, and the people delight in playing at the *Roaring Game*, and ladies attend in groups to give eclat to the sport. The exercise has so much improved the physical condition of clergymen, lawyers, doctors, shopkeepers, and others of in-door occupations, as well as the moral bearing of the people at large, that the Royal Caledonian Curling Club of Edinburgh, composed of the nobles with the Prince Consort for patron, and Her Royal Highness as patroness; the Earl of Dalkeith, President, and Rev. Dr. Simpson, Kirknewton, Chaplain, spend large sums yearly to encourage it, and almost every parish has its Curling Club and pond; thus, kind inducements and healthful sport has banished dissipation from the land.

St. Andrews is famed for its colleges and churches, and their grounds are well layed out and cleanly kept; but it is apparent, from the sparseness of flowers and shrubbery upon them, that horticulture, as a science, is neither taught nor worshipped there. But the creditable displays at dwelling-houses make up for it. Fragments of the old Cathedral still stand, its grounds are a cemetery, with scarcely a flower or a shrub to enliven it, or bespeak the virtues of those that rest there; and, in that respect, it is the most forgotten graveyard I ever saw. The wall upon which the sainted George Wishart delivered his immortal speech, and the tower where Bishop Starke once stood so proudly, still remain.

[SCONE PALACE.]

Perth is a picturesque town, with the broad river Tay running past, and spanned with two noble bridges. The city stands between two large meadows, called South Inck and North Inck, which are used as pleasure and play grounds and bleaching greens. The country is very highly improved, beautiful and romantic. On the opposite side of the river from the North Inck, is *Scone Palace*, memorable for being the place where Robert Bruce was crowned King. Upon the same side of the Tay, and below the city, is *Kingfaun Castle*. Both places are ancient, but have many modern improvements upon them; but the fine roads, green lawns, noble shrubbery, and the gigantic proportions of the old trees, show the beautiful effects of maturity.

The Ribbon system, so general in Scotland, may be described thus: The flowers are all planted in rows in square bed and rings, in ovals and circles; and one species or variety makes a whole row or ring; the rows, and plants in the rows, are set so far apart, as to give them room to grow and show their blooms to advantage, and are so arranged as to give a harmonious contrast of colors; and by June they are a mass of blooms, and continue until frost; and yet the colors show the rows as distinctly as the plants did when newly set out. Not a faded leaf is allowed to stay, and as the blooms fade they are cut off, which keeps them green and growing, and in bloom the whole season. No plant is allowed to bear seeds, as the faded blooms and dry stalks would disfigure the beds. (Indeed it is folly to grow flowers for pleasure and let them wither off to ripen seeds, when seeds are so cheap; and the useful time lost in saving seeds in a small way, far surpasses the price of purchasing a fresh lot. The shortest annual of bloom can be made to flower all the season by cutting off the blooms when they begin to fade. I have practised this method in our own country for twenty years, with success.)

I saw an oval planted in the Ribbon order; in the middle was a large, hardy, crimson Fuchsia, with a scarlet Salvia on each side of it, and rings of the following genera around them; in beginning, at the middle, first was Heliotropium, then Brown Calceolaria, double white Gillyflower, dwarf Scarlet Geranium, Yellow Calceolaria, Mignonette, Phlox Drummondii, Sweet Alyssum, Clarkia pulchella, White Candytuft, Lobelia gracilis at the edge. They looked as rich and glossy as so many broad satin ribbons spread out and tacked together.

In taking leave of the north side of the Frith of Forth, I wish to return my thanks to Mr. Dargie, Inspector of Railways, Mr. Patrick, Inspector of Engines, both stationed at Ladybank, and to Mr. Elder, Station-master and coal dealer at Kettler, Mrs. Elder, of the refreshment rooms at Ladybank

Station, who severally accompanied me and gave me much information.

Horticultural Notices.

PENNSYLVANIA HORTICULTURAL SOCIETY.

DISCUSSIONAL MEETING, APRIL 1.

The discussion on the "Utility of Orchard Houses," was opened by Mr. Thomas Meehan. He defined an orchard-house as a structure which merely protected fruits from the *extremes* of climate. When costly houses were built, or apparatus provided for advancing fruits out of their regular season, they were vineries, fruit-houses, forcing-houses, etc., and not properly orchard-houses. He detailed the uncertainties of out-door culture, and the more certain results of the orchard-house, as bearing on the question of the evening, the "Utility of Orchard-houses." Passing from the question, he reviewed some of the mooted points of orchard-house management, recommending the growth of plants in pots, instead of borders. Would pot a year, and grow in the open air, before growing under glass; would pinch out strong shoots, and favor the extension of weak ones; would build houses on the fixed roof principle, use wide thin glass, narrow and fluted astragals, have flat roofs, and water the plants with warm water. Had had most success with peaches, exhibiting before the society, in years past, peaches three years old, in 20 inch-diameter tubs, with 140 fruit. Had least success with cherries.

Mr. Walter Elder said, that setting aside the question of profit, the recreation afforded by, and the great beauty of an orchard-house, at so small a cost, was a sufficient measure of their utility.

Mr. Saunders had succeeded well with peaches, plums and nectarines. An orchard-house was more productive than generally supposed. One 100 x 20 feet would give all the peaches required by most families. Did not like pots. Every advantage they had were possessed also by borders one foot deep, with concrete bottoms, which had other advantages pots had not. Preferred heating apparatus to be attached to orchard-houses. Root prune the border trees annually. Where borders were deep enough, he would drain with tiles and 8 inches of broken material. Approved of divided and detached borders.

Mr. Harrison preferred pots to borders.

Mr. Eadie's experience agreed in the main with Mr. Meehan's.

An incidental question was raised as to the cause of yellows in the peach, in which Dr. James, Messrs. Mitchell, Eadie, Graham, Saunders, Ritchie, Harrison, Meehan, Kilvington and others participated, in which the most novel fact was adduced by the last named gentleman, that previous to the appearance of the yellows, the heart wood of the tree died.

Returning to the subject of the evening, Mr. Ritchie spoke against orchard-houses, on the score of expense. The tendency to underrate expenses was general. Pay a man $500 per year, and the incidentals necessary to work him will bring up his cost to $700. There were also risks in orchard-house management, as well as in the open air, which should not be forgotten. It was a pretty luxury, but he doubted whether, on the whole, orchard-houses were of much utility or profit.

THE MONTHLY DISPLAY, APRIL 8.

Contrary to all expectations, the display of plants and flowers was very large and remarkably fine. The attendance of visitors was not so numerous as at the March meeting, owing to the inclemency of the weather; the hall was, however, comfortably filled.

James Eadie, gardener to Dr. Rush, exhibited a miscellaneous collection of plants, occupying one entire side of the hall. He also placed upon exhibition a magnificent table design, of towering height, composed of choice flowers; also a pair of hand bouquets and a basket of cut flowers. The latter attracted much attention. A hanging basket, deposited by Mr. Eadie, received the commendation of the lady visitors.

Edward Hibbert, gardener to Fairman Rogers, placed upon exhibition a large collection of plants, among which were several fine varieties of Azaleas, Begonias, Marantas, Camellias, Cinnamon plant, &c.

Mr. Thomas Meehan deposited a collection of Pansies, two specimens of Polyanthus, the "Major General" and "Colonel," and two English Primroses.

John Pollock, gardener to James Dundas, had on exhibition a very fine collection of flowering plants, among which were the Euphorbia splendens, Jasminum multiflorum, and a beautiful specimen of Genista hybrida, a species of Cape broom.

Christian Mack, gardener to F. Lennig, deposted a pot containing a splendid specimen of "Sonerila margaritacea superba." They were the finest and best grown ever exhibited before the society, and are probably the finest in America.

Mr. Robert Buist presented several fine Azaleas,

among which was the Alexander II, exhibited for the first time. There were also shown by him, for the first time, the Wiegelia alba, and a Seedling Petunia resembling the Zouave.

Wm. Joyce, gardener to M. W. Baldwin, placed upon exhibition a splendid basket of cut flowers of massive proportions, and artistically arranged. He also exhibited a fine specimen of Franciscea exima.

Adam Graham, gardener to Genl. Patterson, exhibited six plants for competition.

Charles Campbell, gardener to Thomas Winans, of Baltimore, deposited fifty new Seedling Azaleas, many of them of them of great beauty.

STATED MEETING, APRIL 15.

Premiums awarded for display of 8th inst.:

To James Eadie, gardener to Dr. Rush, *Six Premiums*, for best Basket Cut Flowers, Pair of Bouquets, Hanging Basket, Table Design, Collection of Plants.

To John Pollock, gardener to James Dundas, *Two Premiums*, for Variegated plants and specimen of Genista hybrida.

To Edward Hibbert, gardener to Fairman Rogers, for Collection variegated plants.

To Robert Buist, for 2d best Collection of plants.

To Wm. Joyce, gardener to M. W. Baldwin, for Basket of Cut Flowers.

To Thomas Meehan, for best Pansies.

To Adam Graham, gardener to Genl. Patterson, for Collection of five plants.

Members Elected—Mrs. H. W. Scull, Mrs. C. B. McManus, Miss Emma Fisher; Messrs. Hartman Kuhn, Percival Roberts, David W. White, L. C. Bauman, Henry C. Gibson, Daniel McKeige, Richard P. Harlan, Thomas Sparks, Wm. Southwood, Francis R. Cope, Edward Browning, J. J. Griffiths and J. V. Merrick.

Mr. Robert Buist resigned his office as Treasurer.

As the season was too early for Roses and Geraniums, which were comprised in the schedule for April, they will be open for competition at the coming display in May.

BROOKLYN HORTICULTURAL SOCIETY.

Our reporter records the progress of this society in popular estimation, as very encouraging indeed.

The March semi-monthly meeting was one of the best supported of all. In the discussions Mr. P. T. Quin took a prominent part, addressing himself to Pruning the Pear,—a subject in which he has had considerable experience. He said:

"1st.—Pulverize the soil to a depth of two feet.

"2d.—Keep the soil free from standing water.

"3d.—Allow no unfermented manure to be placed in the hole at the time of planting.

"4th.—A soil that will yield sixty bushels of shelled corn to the acre, will produce paying crops of fruit.

"For the pear, the pyramid or conical shape is preferable to all others, for these reasons:

"Two years from the time of budding, the young tree is ready to be taken from the nursery row, and consists of one main or centre shoot, with numerous side shoots or laterals. The most vigorous of those are on the upper part of the centre shoot, while the weakest are near the ground. The plan of pruning should then be directed to check the upward tendency of the sap, so that it will be disseminated in the lower part of the tree, to develope the dormant buds, and increase the strength of the weak branches. I will remark, that in setting out a tree the weakest side, or that with fewest branches, should be placed facing the south-east, as the strongest growth of wood will be made in that direction. By this means less labor in pruning is required to keep the tree in balance.

"Owners should not be over anxious to have a large tree in a few years, but rather endeavor by cutting back to get a stocky growth and strong branches near the ground.

"To encourage the growth of wood, prune in winter; to encourage fruit bearing, prune in summer.

"New beginners are apt to permit a young tree to overbear before it has established itself. It always proves a detrimental practice."

Mr. Thomas W. Field next took up this subject. Taking a small pear-tree, he illustrated the mode of pruning and training it, making a well-shaped foundation out of what appeared to be a very ungainly looking sapling. Trees should be pruned as soon as the sap commences running—say from now until the middle of May. Mr. Field's remarks were lengthy but exceedingly interesting, and of a practical character.

At the first bi-monthly meeting in April, an interesting discussion ensued on the value of the toad to the gardener. Mr. Fuller and Mr. Burgess both spoke in their favor, the former estimating them as worth five dollars apiece.

On the Fruit question Mr. Burgess cautioned the the audience against permitting trees to bear young.

Mr. Brophy gave details of a long and favorable experience in root-pruning fruit trees, to induce fruitfulness, and advocated the continued cultivation and cropping of orchard trees.

Mr. Fuller's remarks appeared to show that he did not esteem destroying fibrous roots as a serious

injury, because, said he, they die annually at any rate. He would apply manure to fruit trees, and prune them in spring and not in the fall.

The foreign strawberries grew more out of the ground than the American, and so suffered more in the winter. He would cover in winter with straw in preference to leaves.

MISSOURI STATE HORT. SOCIETY.

This prospering institution held its annual meeting on the 14th of January, at St. Louis. Dr. C. W. Spalding was elected President for the coming year, and Mr. W. Muir, Secretary.

Downing's Fruits of America was adopted as the Society's standard of nomenclature.

Of well tested kinds in Missouri, the society recommends for general cultivation:

Apples. *Summer*—Early Harvest, Red June, Maiden's Blush. *Fall*—Rambo, Pennsylvania Red-streak. *Winter*—Yellow Bellefleur, Ortley, Winesap, Rawle's Janet, Pryor's Red, Michael Henry Pippin, and (for limestone) Newtown Pippin.

Peaches. Troth's Early, Large Early York, Old Mixon Free, Crawford's Late, Old Mixon Cling, Heath Cling.

Pears. *Summer*—Bartlett, (Dwarf) Doyenne d'Ete, Madeline, Tyson. *Fall*—(Dwarf) Louise Bonne de Jersey, Belle Lucratif, White Doyenne, Seckel, Duchesse d'Angouleme. *Winter*—(Dwarf) Glout Morceau, Winter Nelis.

Strawberries. Wilson's Albany, McAvoy's Superior, Longworth's Prolifiic, Monroe Scarlet.

Blackberries. Lawton.

Raspberries. Did not seem to be well enough known to hazard a list for general cultivation for the State.

Grapes were also held over.

ANNUAL MEETING OF THE FRUIT-GROWERS' SOCIETY OF PENNSYLVANIA.

(*Concluded from April number, page* 128.)

Mr. Hoopes thought a wrong idea prevailed as to the labor necessary to a vinery. Knew a friend who had a small vinery, from which he had raised as much as sixty pounds from one vine, which he attended entirely himself, and his estimate was that it took two full days per year.

Mr. Rutter said there was no necessity for farmers going into expensive graperies. Glass was the chief expense. Had a house 50 feet by 12, built by hatchet and saw, cost $125.

Dr. Houghton thought these cheap houses soon needed repairs, and were the dearest in the end.

Mr. Rutter said his cheap houses did not cost over $3 per annum for repairs, which he thought a low rate of interest.

Some members recommended flues. Mr. Rutter opposed any such necessity. If vineries were ever to be popular, they must be without flues. Cold vineries have been successful for many years, and no one thought of flues till now.

Mr. Purple had been successful in growing plants and grapes together, in the same house.

The President had seen grapes and flowers grown with tolerable success together in Connecticut. With regard to the comparative profits of the exotic grapes and native grapes, facts were still wanting. He had heard nothing to discourage either branch.

As many members were present who were not at the Vine Grower's meeting last fall, a vote was taken on the best five grapes for general cultivation, when the Concord was still retained at the head of the list.

APPLES.

Mr. Baldwin thought by clearing of forests, the climate had become dryer, and so apples did not do so well.

Dr. Houghton showed fruit did best near streams of water. At Rochester, Pears had a bloom on the skin, at Philadelphia they had not; but when grown in the damp air of an orchard house, they had all the world over.

Dr. Kellar said, where apples grew close together so as to keep the drying winds from each other, they did best. Cultivating apple orchards was a great injury. Never knew an instance where an orchard did not do well in grass, and from the day any one was afterwards plowed up and cultivated, that orchard was a failure. Plants his trees only fifteen feet apart, leans them a little to the west, to break the force of the spring suns on the bark, and heads low. He cultivated till it commenced bearing, and then left in the sod. What matters grew under the trees he would cut down and leave to rot as a mulch.

Dr. Houghton instanced a case of beneficial close planting.

Mr. Purple also instanced similar cases.

A gentleman stated that formerly it was the practice in Lehigh county to have the orchards in grass. One after another the farmers got into the practice of breaking them up, and invariably the trees began to fail. He only knew one orchard in Lehigh county that was productive, and that was the only one left in grass,

Mr. Rutter thought orchards failed through wearing out of varieties. It was necessary to be continually raising new varieties, to suit the varying conditions of climate.

The President thought the mass of evidence was against the theory of the wearing out of varieties. Dr. Houghton had shown that a variety that was thought to "run out," in one place, had a fine bloom and did well near lake regions. Under-draining renders atmospheric changes less extreme. Speaking of fertilizers, he said inorganic matters, that had once been part of organic bodies, was better than that which had not. Thus shell lime had been found better than stone lime, and common potash better than that from feldspar rock. He offered a high eulogium on the horticultural labors of A. J. Downing, but thought his advice to highly manure and stimulate orchard trees, had been of incalculable injury to the cause of the fruit grower. The production of wood and the production of fruit were antagonistic principles, and you could not, by high manuring, and injudicious cultivation, stimulate one, without injury to the other, and the risk of many diseases. He knew men, high in the estimation of the Fruit-growing community, who had supposed their orchards were thriving under what they called good cultivation, and had been amongst the foremost of public advocates of the practice, who were now hesitating, and were about to seed down their orchards. Even in Strawberry culture, Mr. Knox had found that it injured the crop of fruit to stir the soil between the plants, and now had abandoned it. He understood, also, that Mr. Charles Downing had, of later years, adopted the practice of pasturing his apple orchard.

Mr. Rutter thought the advocates of root-pruning, as a means of fruitfulness in trees, were inconsistent when they opposed the plowing up of orchards.

Dr. Houghton thought not. Plowing and manuring made trees grow at the expense of the fruit, which was the opposite of the object sought by root-pruning.

A communication was here handed in from Vice-President J. E. Mitchell, with a plan for a cheap Vinery, 12 by 24, estimated to cost only $75. It was voted to offer the plan for publication in the *Gardener's Monthly*.

Can Dwarf Pears be raised in Eastern Pennsylvania, with a profit to the market grower?

Mr. Rutter thought they had generally failed, through planting varieties that done badly on quince. Proper varieties would be successful.

Mr. Baldwin had about two hundred varieties. The selection of varieties was very important to the market grower. For Bartletts he could get six dollars a bushel, but for Dearborn's Seedling and Julienne, from two to three dollars per bushel was all he could get. Standard Pears were certainly profitable. Dwarf Pears did well only when low enough planted to strike out roots from the Pear stock. Many varieties would not strike out when they had the chance. Vicar of Winkfield bears well on quince. Clairgeau bears early on quince.

Dr. Kellar said the Dwarf Pear was only profitable when under very skillful hands. No system of pruning applied to all varieties; too much effort to mould all kinds into one system is ruinous to some varieties. Never let stable manure touch the roots—digs a trench around, and lets the roots run into it as they grow. Does not bury the quince stock, but brings soil and hills up about until the pear stem is just reached. Rostiezer he finds a suitable kind. Baldwin apple does not like pruning, —bends down the shoots instead, to promote fruitfulness.

Dr. Houghton thought if Pears did well any where it should be in Pennsylvania, where so many good seedlings seemed almost natural to the soil. Standards he thought more profitable than dwarfs, but they were too large for small city gardens. One advantage, dwarfs seldom blight—standards often did. Yet he does not believe there is a successful Dwarf Pear orchard in Pennsylvania, while he could point to legions of losses. It was not for want of skill. He named many gentlemen who had failed, many of them of well-known skill in horticulture. In other States, under very favorable circumstances, and well-skilled hands, a few had succeeded. Thought there was too much trifling, however, in some respects. In his own case, three men planted five hundred per day, and the trees had done as well as if they had done but five, as is often done. Had got "bearing trees" when he started, and others two year olds. Many of these had now borne, (six years ago), but he had none yet from his "bearing trees," many of them had died outright.

We have given only a very brief abstract. Many other things of interest was said and done, of which only those who subscribe the trifling sum asked for membership, and get the published transactions, will ever know. The last business before the meeting was a resolution that the proposed duties on trees, plants and flowers, would be of very little advantage to the government, and prove very destructive to the best interests of the fruit-growers of the United States, which was carried with but one dissentient vote.

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Hints for June.

FLOWER-GARDEN AND PLEASURE-GROUND.

Mow lawns often, if you would have them green and velvety. Keep the scythe sharp; usually mowers do not use the grindstone often enough. Common farm scythes are not fit for lawn use; riveted, and short scythes are the kind to get. If a lawn is mowed often, the grass need not be raked clean,—the sappy blades soon wither, and make a manure for the roots. The longest should be raked off, or the lawn will have a littery appearance.

Flower-beds should be hoed and raked, as soon as the ground dries after a rain. Loose surface soil prevents the under-stratum drying out. Peg down bedding-plants where practicable. Split twigs make the best pegs. In dry weather do not water flower-beds often; but do it thoroughly when it is done. See that the water does not run off, but into and through the soil.

Propagation by layering may be performed any time when strong vigorous growing shoots can be had. Any plant can be propagated by layers. Many can be readily propagated no other way. Cut a notch on the upper side of the shoot, not below as all the books recommend, and bend down into, and cover with rich soil. In a few weeks they root, and can be removed from their parent. Stakes for plants should be charred at the ends before using, when they will last for years.

Dahlias should not flower early. Keep them growing till fall, when they will flower finely.

Bulbous roots, when done flowering, and the leaves have faded, should be taken up and dried,—mixed with chaff, or other light loose material, placed in paper bags and stowed away in a dry place till fall.

Cut off the flowers of roses as they fade,—the second crop will be much better for the attention. Seeds of all flowering plants should be also taken off; all this assists the duration of the blooming season.

Towards the end of June propagation by budding commences. This is very commonly employed with the rose; but ornamental trees and shrubs may be increased in the same way. Closely allied species must be chosen to work together.

Evergreen hedges will require attention as they grow. Where the height desired has been attained the top and strong growth should be cut back while they are still watery. The side shoots need not be touched till past midsummer. All wise people now employ the conical shape for hedges. In cutting back the top growth at this season, the conical form can still be preserved.

Since our first volume, wherein we described how to prune evergreens, it has become a sort of mania, and, where the principles are not well understood, we notice the tree is frequently spoiled. It should be remembered that when the sides of an evergreen is pruned to make it bushy, the leading shoot has to be shortened at the same time. Shorten this leader to within a foot of where the shoot pushes which you would adopt as the new leader,—this will serve as a stake to tie the new leader to, which should be drawn as closely to this "stake," at its junction with it as possible, so as to leave as little of a "link" in the main trunk as we can; next year this "stake" can be cut out altogether. It is always of more benefit to the compact beauty of an evergreen to cut out the leader, than to shorten in the side shoots; and in many cases, it is all that is required by the new art. No trees, evergreens especially, should have grass permitted to grow around the roots for a year or so after planting. Grass absorbs moisture, and the tree will probably want all about it for itself. When well established the luxuriant growth shades the ground, and grass

cannot grow then very strong, and does little injury.

FRUIT GARDEN.

GRAPES coming in bearing should not be permitted to perfect large crops of fruit while young. It is excusable to fruit a bunch or so on a young vine, "just to test the kind," but no more should be permitted till the vine has age and strength. Vigorous growth, and great productiveness, are the antipodes of the vegetable world. Encourage as much foliage as possible on the vines, and aim to have as strong shoots at the base as at the top of the cane; this can be done by pinching out the points of the strong shoots after they have made a growth of five or six leaves. This will make the weak ones grow stronger. Young vines grow much faster over a twiggy branch stuck in for support than over a straight stick as a trellis, and generally do better every way. Where extra fine bunches of grapes are desired, pinch back the shoot bearing it to about four or five leaves above the bunch. This should not be done indiscriminately with all the bunches. Too much pinching and stopping injures the production of good wood for next season. These hints are for amateurs, who have a few vines on trellisses; for large vineyard culture, though the same principles hold good so far as they go, they will vary in their application.

Strawberries, when grown in hills,—the most laborious but most productive method of growing them,—should have runners cut off as they grow, and the surface soil kept loose by shallow hoeings occasionally. Short litter, half rotten, as a mulch, is also beneficial. Lawn mowings are often applied, but with little benefit. Where they are grown in beds, they should not be too thick, as they starve one another, and the crop next year will be poor.

Gooseberries should have the soil, and even the plants, if it were practicable, shaded a little. Dry air about them is one great cause of mildew.

Currants are so easily grown as to require few hints for their management. If they throw up many suckers, take out a portion now, instead of waiting till winter to cut them away. The Currant borer is a great pest, eating out the pith of the young shoots, and causing them to grow poorly, and bear but small fruit next year. Gummy "fly paper" is, we think, the best thing to catch them.

Blackberries are not ripe when they are black. Leave them on till they part readily from their stalks.

Stone fruits will now be attacked by curculio, and no means should be spared to keep it down. Those who try the jarring process should saw off a branch on the main trunk, a few inches from it, to hammer away at. Some we see hammer the trunk, but this cannot be done suddenly and hard enough without injury to the tree.

How to manage the black knot is yet a mystery. That it is not caused by the act of the curculio seems generally believed by cultivators. One great point in favor of this view is, that the knot never appears on the wood of the same season's growth, in which, soft and succulent as it is, one would suppose a good nidus for the curculio to deposit its eggs; but it always appears on wood two years old and upwards, frequently bursting out through the thick, hard and shaggy bark of the aged main stem, through the indurated and dead skin of which it would be impossible for the curculio to insert its ovipositor. With the certainty that it is not of insect origin, the field of examination is much limited, and we may hope for a nearer approach to the cause another season.

Leaf blight in Pear trees, frequently shows itself at this season of the year; probably owing to too rich a soil, as those growing in highly cultivated vegetable gardens are always the worst. In nursery seedlings, it is worst in the first few years, while the roots are in the upper and rich surface soil,—after the roots go down into the poorer subsoil, as in the Pear they seem to delight to do, leaf blight is not so formidable. In old neglected Pear orchards, though there are many penalties to pay for said negligence, leaf blight is not one of them.

Fire blight—the apoplexy of Pear trees, by which they often die in a day,—is probably traceable in part to the same cause as leaf blight, as trees raised and grown in what may be termed a poorish soil, never have fire blight.

VEGETABLE GARDEN.

AT the end of June some celery may be set out for early crops, though for the main crop a month later will be quite time enough. It was once customary to plant in trenches dug six or more inches below the surface; but the poverty of the soil usually at this depth more than decreases the balance of good points in its favor. Some of our best growers now plant entirely on the surface, and depend on drawing up the soil, or the employment of boards or other artificial methods of blanching.

In our second volume a correspondent described a mode of employing charcoal for the purpose, which produces fine, firm and crisp stalks. Sawdust, sha-

vings, and similar matters have also been used with beneficial results. Very rich soil is essential to fine celery, and well-rotted cow-dung is one of the best of manures for this crop.

Cabbage and Brocoli may still be set out for fall crops, also requiring an abundance of manure to insure much success. Lettuce, where salads are in much request, may yet be sown. The Curled Indian is a favorite summer kind; but the varieties of Cos, or Plain-leaved kinds, are good. They take more trouble, having to be tied up to blanch well. Many should not be sown at a time, as they soon run to seed in hot weather.

Beans produce enormous crops in deeply trenched soils, and are improved as much as any crop by surface manuring. We hope this method of fertilizing the soil will be extensively adopted for garden crops this season. Those who have not yet tried it will be surprised at the economy and beneficial results of the practice.

Peas for a fall crop may be sown. It is, however, useless to try them, unless in a deeply-trenched soil, and one that is comparatively cool in the hottest weather overhead, or they will certainly mildew and prove worthless. In England, where the atmosphere is so much more humid than ours, they nevertheless, have great difficulty in getting fall peas to get through free from mildew; and to obviate these drying and mildew-producing influences, they often plant them in deep trenches, made as for celery, and are then much more successful with them.

Cucumbers for pickling may be sown this month, and endive for fall salad set out. Parsley for winter use may be sown now in boxes of rich soil, and set in a cool, shady place till it germinates.

Tomatoes do best when suffered to grow flat on the ground; but in such cases the soil should be covered with a mulch of straw or litter to keep the tomatoes from getting soiled and rotten by dampness. Brushwood is an excellent material for them to lie on, and they seem to thrive well with it about them.

Asparagus-beds should not be cut off after the stalks seem to come up weak, or there will be but a poor crop the next season, and the beds will "run out" in a few years.

Herbs for drying for future use should be cut just about the time they are coming into flower. Dry them in the shade, and after sufficiently dry to put away, tie them in bunches, and hang in a cool shed, or place them loosely between the paper. and stow away in cupboards or drawers,—the last mode is by far the cleanest and most approved plan with the best housekeepers. Some, indeed, powder the leaves at once after dry, and put away in bags ready for use.

Communications.

CIRCULATION OF THE SAP.

BY MR. ELMER BALDWIN, FARM RIDGE, ILL.

Having read with interest an article in the April number of the *Monthly* on the "Circulation of the Sap, by Charles Reese," I feel inclined to give you some brief suggestions and items of experience bearing upon the subject.

Vegetable physiologists agree that the leaves of plants are the elaborating organs, and yet seem to forget the principle when carrying out the details of their theory. Observation has convinced me that all the nourishment of plants must come through the leaves, and that the top, consequently, must govern the root. A case in point: Several years since, some men in my employ lifting apple trees in the nursery, stated that they could lift some varieties much easier than others, for the reason that the roots were more compact, grew nearer the surface, or had some other peculiarity. I inquired how that could be. as they were grafted on seedling roots promiscuously taken. Subsequent observation convinced me that if the graft form the entire top it will govern the root also. The Janet will have its own peculiar root, etc., through the entire row, showing the governing influence of the leaf.

A friend called my attention to a radical change produced in the habits of some cherry stocks, by grafting. The stocks were sprouts from the sour Morello cherry, that has such an inveterate habit of throwing up suckers, that if vegetable existence had moral responsibility, they would have much profanity to answer for. The grafts were from a variety not inclined to sucker, and by removing all the branches and sprouts from the stocks they never threw up any more.(1)

Now I infer from these facts, that sap imbibed by the roots is crude material, and, like the chyle taken up by the lacteals, in the animal economy, is unfit for nutriment till it undergoes a chemical change in the lungs or leaves.

From whence then does the nutriment come to support the first growth of the buds and leaves; it cannot be elaborated by the leaves, for they do not exist; it is even doubtful if the rootlets or vegetable lacteals exist, but are reproduced annually, sim-

ultaneously with the leaves, and that there is no sap imbibed by the roots till after growth of both leaves and roots. (2)

Nature never makes mistakes. The germ of the chick, when it commences growing in the egg, finds plenty of nourishment prepared for its support. The silk-worm, and many other insects, never eat after they are developed as the perfect insect, but have sufficient material reserved to enable them to perform all the functions of their life: and seeds of all kinds contain within themselves sufficient nutriment to sustain the young plant till the organs of nutrition are developed. And it is, doubtless, the last business of the plant, before it take its annual sleep, to elaborate and deposit the material for the development of the buds and leaves, and in some plants, for the flowers and germ of the fruit: this is probably deposited in or on the alburnum.

Those who have been in the habit of budding fruit trees, have noticed at a certain season the sap coagulate or thicken, and that soon after the bark ceases to pull no sap can be found by incision, The first warm weather of spring liquifies and sets this material in motion. Whether the alburnum parts with a portion of its material, the remainder becoming permanently solidified, or whether the vessels of the inner bark retains a supply of the descending sap or vegetable blood, (from which the plant is always nourished), to supply the early spring growth, is a question, perhaps, more curious than important. As in all exogenous plants, the elaborated material is supposed to descend in the vessels of the inner bark, its retention in the vessels or deposit in or on the alburnum, makes but a slip more or less in natures process.

The economy of nature in solidifying for the winter rest, and after enduring the frosts of winter (not congealed by it, for it is solid long before frost occurs) to liquify under the spring's warmth, is one of those mysteries we can observe, but probably never fully explain. That such is the fact, is proven by the limbs of the Willow, Chestnut, etc., when severed from the tree during winter, becoming full of sap, and separating freely from the bark in spring, notwithstanding it has long been separated from trunk and roots. (3)

The amount of material thus liquified in early spring, is, in some trees, very large; instance the Sugar Maple, which yields its sap while the frost is coming out, but never after the roots are clear of frost. If this theory be the true one, it accounts for the flow of sap in one part of the plant. and not in the other, where the temperature is different, and for the growth and development of cuttings, buds, etc. (4)

[1. The influence of the graft on the stock is very slight, and we think there is not evidence enough to infer that it goes to the extent our correspondent supposes. An instance has been known of a common Laburnum, when budded with the purple-flowering, producing purple flowers from shoots *below* the point of union. We think we have also seen at Mr. Reid's Nursery, at Elizabethtown, N. J., Willows, budded with the variegated, producing variegated leaves below the union; but these are very rare cases. In thousands of other instances no difference is perceptible. Certainly the instances show that there is a little influence downwards, and that there *may be* more than we know of.

2. This is an error. Experiments have shown that sap is absorbed all through the winter by trees, so much so as to add considerable to their weight by spring. We have not the experiments to refer to, but we believe as much as 8 per cent. is added to the weight of wood in the spring by the accumulation of sap through winter.

3. This is "important if true," as the newspapers say. Our correspondent, by the expression "becoming full of sap," can scarcely mean that the branch has added to its weight after being cut from its parent stem. If the sap becomes "solid" and "liquifies" in spring, anatomists would be able to exhibit it in its solid form, which we do not know of any one having done.

4. Though we make the above corrections of what we believe matters of fact, we would not detract from the value of many of our correspondents views which are suggestive in many respects.—Ed.]

WINDOW PLANTS.

BY MRS. R. W. B., PHILADELPHIA.

I have been considered to have success with my window-plants, and without presuming that my way is much better than other people's, do think my plants as good as any of my acquaintances. I thought I would say that I think your directions very good about not having too much fire heat in the room where the plants are kept, as I have found it to work to the injury of the plants. I try to let them have as much sun as I can give them, and sprinkle them at times to keep the dust off, and the insects down. But there is one thing I do which you have said nothing about, but which I think has much to do with my success, namely, I never water my plants with any thing but lukewarm water. I most always have a pitcher full of water standing in

the sun by the window to get warm before using it; but if I should want to water my plants before I have my water warmed by the sun, I pour in a little from the tea-kettle, just to take the chill off of it. Though I have no fire in my room, my plants keep on growing all winter, and China Primroses and Scarlet Geraniums, and some others, bloom well before winter is over. If I have any fear of frost injuring my plants, I take them entirely away from the window, and place them on the floor, covering them with muslin, and keep the shutters closed as much as possible. I have not got to take this trouble often, perhaps only half a dozens times during the winter. If my experience will be of use to your paper, you may publish my account of it.

PEACH CULTURE.

BY MR. JOHN RUTTER, WESTCHESTER, PA.

I HAVE had but little time to look into the last number of the *Monthly*, but in glancing hastily over your report of the proceedings of the Fruit Grower's Society, at Lancaster, I felt not a little mortified at being placed in an antagonism with myself on the subject of Peach Culture. On page 128, as per your report, "Mr. Rutter, some years ago, &c. The yellows was the disease that modern peach growers had to contend against. *This he thought arose from the absence of a high state of cultivation and consequent vigor.*" And again, on the same page, "Mr. Rutter thought that when all that was necessary to raise good peaches was to keep away the yellows, and *when through manuring and good cultivation would have this effect.*"

If correctly reported, I must have failed in impressing the members present with any thing like consistency on the subject of Peach culture. I have always condemned the system of *thorough manuring;* I never adopted it myself, and have never advised it by word or act. I am satisfied, on the contrary, that high manuring is greatly injurious in the cultivation of peaches: but *good culture* is required. I think that I thoroughly understand peach culture, theoretically and practically. I have had over one hundred acres bearing at a time in different locations, different soils and different exposures, and met, as was stated by others, with entire success. All this idea about late ripening of wood, viscid sap, etc., in accounting for failures, and covering up erroneous systems and bad culture, amounts to nothing. Peach trees, if properly treated, never meet with these disasters in this climate, and will fruit too, on "single buds." I certainly intended in my remarks to convey to the society, and to the public, the reverse of your report. I believe that high manuring and great vigor will induce disease; while *good cultivation* on good ground, or even third rate in point of fertility, will give health and fruitfulness. Such has been my experience. I mean by good cultivation, plowing and thorough stirring of the ground in spring and and in the early part of summer; also, carefully removing all trees attacked with yellows, and a thorough examination of each tree spring and fall, at and under the surface, and the removal of the larvæ of the peach insect.

I was rather astonished that members of our society, who had visited my orchards scores of times, when bending under the weight of fruit, spoke of success in the cultivation of the peach, in Easton, Pennsylvania, with doubt. What has been done once can be done again, and this I hope to fully demonstrate, ere long, to our friends of little faith.

My object in these lines is to set myself right, fearing that silence would commit me, in public estimation, through a misapprehension in your report, to a system I have always condemned. I have, therefore, been induced to bring the matter to your notice, trusting the correction will be made.

[Mr. Rutter was correctly reported in our pages; but no one accustomed to taking notes of discussions is surprised that speakers, talking on the spur of the moment, are liable to apparent contradictions, as often facts, leading to opposing results, occur to the mind at different times. Still we are always glad to receive explanations, and frequently insert them without even a hint that the misconception of the author's more deliberate opinions is not our fault.—ED.]

PATENT-OFFICE SEEDS.

BY QUERIST.

I WAS in hopes that some one of your numerous correspondents would have taken up the cudgel against H. A. D., who, in my estimation, deserves all the odium the blackest ink could lay on his shoulders. So far from the distribution of patent-office seeds being an evil, of which the community should complain, I regard it as showing the beneficent generosity of our government, and is an illustrious example of what foreign governments should do, if they really had the good of their subjects at heart. I received this year for my garden, without costing me one cent, all the vegetable seeds necessary for my family use, through the favor of our member of Congress, who was under some obliga-

tion to me for my vote; (next year my neighbor, who votes the other ticket, expects to get his garden supplied in the same way. I don't think so). Among these seeds I had extra early peas, turnip beets, radishes, squashes, pumpkins, etc., all from a stock bought, according to a Washington paper, by the government from a Philadelphia seedsman, (who the same papers had previously stated, worked hard to get Mr. Newton into the Agricultural Division of the Patent-office), for $11,500.

How does this operation work to the injury of the seed trade, or the nation, as H. A. D. would have us believe? By the reception of these seeds I am encouraged to persevere in Horticultural pursuits, and the nation at large is indirectly benefitted by my increased energy.

Now in my estimation, the great fault with the system is that it is not comprehensive enough. The government stops at the very threshhold of usefulness, when it makes a few peas and pumpkins, at a miserable expenditure of $30,000 per annum for seeds, $500,000 for postage, and another $500,000 for incidentals connected with the department, the only objects of free distribution. It has been shown in the *Gardener's Monthly* that cheap glass structures are likely to be of immense value to the nation, in the increased and certain production of fruit; and the government should feel it a sacred duty to foster the infant improvement, by a liberal distribution all over our broad country, of glass, putty and paint. The importation of improved bulls, and the free distribution of other popular breeds of cattle should also be attended to, not forgetting pigs, which would have an immense influence on the popular votes in many districts, and be one of the best means of securing the right men for the right places. One true source of national greatness and prosperity.

I might pursue this subject to infinity, but have, I trust, said enough to utterly demolish the flimsy arguments of H. A. D., who seems foolishly to suppose that seedsmen have the same right to the consideration of their business from the government that other tradesmen have.

[Our correspondent is evidently a man of genius, and exhibits a mind that deserves to rank with the most progressive of the age. The suggestion will, no doubt, be acted on by Congress immediately, and—"who speaks first?"—enterprising horticulturist should send their orders for "paints, pigs, putty and glass," to their congressional representatives at once, or the appropriation may be exhausted.—Ed.]

HORTICULTURE IN SOUTHERN MISSOURI.

BY ———, SPRINGFIELD, MO.

Dear Sir: Your very kind and truly polite letter of 18th ult., just received. I am very happy to learn that sets have been preserved for those who have been cut off by the stoppage of mails, and that I shall again get the *Monthly*.

Distrusting, as I do, my ability to do justice to the subject, nevertheless I am tempted to try to give you a sketch of horticulture with us.

In order to fully understand our "present condition in a horticultural point of view," a brief account of our past seems necessary; and knowing, as I do, the horror which long letters beget in the minds of Editors, I hardly know how to begin or proceed. But I venture.

First, then, our geographical position possesses *peculiar* interest and importance in a *military*, *political* and *social* point of view, as well as horticultural. In a military, because it is the *key* to the entire south-west; as from this place important public roads and mail routes diverge to every possible point of the compass. In a political, because a marked preponderance of intellect, enterprize and wealth had centered *here*. In a social, because in addition to the advantages already briefly enumerated, we occupy one of the very finest districts,—*all* things considered,—in this, or any adjoining state, for agricultural and horticultural purposes, *beside* being the commercial metropolis of the south-west.

Here we are, on the "topmost towering height" of the Ozark mountains, which is merely an elevated plateau some 1600 feet higher than the Mississippi at St. Louis, which consists of beautiful prairies gently undulating, interspersed with fine groves of excellent timber, and abounding with the finest springs in the world; possessing a soil of great fertility, our altitude and latitude make altogether one of the best fruit and grape districts, except California, on this continent.

My first proposition—Military importance—is amply and sufficiently demonstrated by the determined persistency displayed by the contending parties since the beginning of this unhappy strife, to *possess* and *retain* this place; and this fact has a very important bearing upon our present "horticultural," as well as agricultural and social interests.

My third proposition—Social importance—is sustained by the facts that better schools, and more of them were here sustained than at any—I had almost said *all*,—other places this side of Missouri river, out of St. Louis.

Our agricultural and horticultural capabilities are

measurably made known by the fact that, since about the first of July last, armies of from 2000 to 45,000 men, and horses in proportion, have been almost uninterruptedly quartered here, which have derived a large proportion of their subsistence from our crops of grain and fruits, raised within the limits of Greene county; and yet wheat is daily brought to our market at 75 cents per bushel, corn $1 and $1 25 per barrel (five bushels), oats at 30 cents, and potatoes at 45 and 50 cents per bushel; bacon for $5 and $6 per hundred pounds.

Our altitude gives us a comparatively dry atmosphere, which, with our excellent water, and entire absence of marshes and stagnant pools, gives a healthful and salubrious climate, at the same time that it makes a very fine fruit and grape district, as it has been sufficiently tested to decide this question beyond all doubt.

Prof. Swallow, our State geologist, in his first and second annual reports of the "Geological Survey of Missouri," page 206, and which was copied into the Patent-office Agricultural Report, 1857, I think gives a better description than I am capable of doing of the agricultural and horticultural capacities of south-west Missouri, from which I shall venture to make a few extracts, at the risk of being tedious.

He says: "The agricultural resources of the south-west have been mostly underrated. The alluvial bottoms of the Osage and Niangua (pronounced Ne-on-go), Pomme de Terre (pronounced Pum de-tar), Sac (Sock), Marais de Sygnes, Grand and Spring rivers; Turkey, Horse, Deep-water, Drywood, Muddy, Centre, Shoal, Oliver's, Cap's, Hickory and Sugar Creeks, are but little inferior in fertility to the Missouri bottom, and all covered by a heavy growth of the characteristic timber." "But the southwest is doubtless better adapted to the cultiavtion of the *Grape* than any other part of this or the neighboring States. Nature has endowed this part of the country with a temperate, dry and salubrious climate, and a light, rich calcareous and vegetable soil, which produces a vigorous growth of native vines. And, besides, the high bluffs of magnesia, limestone of the Calciferous and Potsdam age, in the Osage, Niangua, Pomme de Terre (Potato), Sac and Grand rivers, usually present natural terraces covered by a rich soil, all wonderfully prepared by nature for the planting of vineyards. * * * It is quite certain, in short, that the cultivation of the grape in the south-west can be made a source of great profit and national wealth. But there is another and a higher consideration, which should lead us to encourage the production of native wines; as the vigor and sobriety of the nation would be greatly promoted by substituting the pure healthful juice of the grape for the drugged and poisonous liquors so abundantly manufactured and consumed at the present day."

"The southwest possesses many advantages for raising stock, particularly neat cattle, horses, mules and sheep; the broad prairies furnish excellent grazing, for the long salubrious summers, and the winters are so short and mild, that but little feeding is necessary." "Timber exists in sufficient quantities to supply all the necessary demands for its consumption, particularly in a country where hedges of the Osage Orange can be so successfully cultivated, and where *stone fences* can be made at so small a cost."

I have been operating in the nursery business in a small way for some little time, and am now prepared to say that, within five years last past, over $300,000 have been paid by citizens of south-west Missouri, to eastern tree peddlers for fruit trees, of which at least twenty-nine-thirtieths are now dead. But the peddler's race is run.

Very many trees — refuse stock — have been brought here and sold at exorbitant prices, and *died;* while some few good trees, from good reliable men, have come to us, and *lived;* and these, together with trees raised in local nurseries, (as many as 200,000 annually) comprise our present stock of bearing trees! but many of these, I am sorry to say, have been wantonly exposed and destroyed by wicked, unprincipled soldiers on both sides, and the vandalisms that have been perpetrated in the track of the armies; are a disgrace to civilization, if not to humanity; and the worst of it seems to be that honorable, high-minded, well-disposed soldiers and officers have to bear the censure equally with the dirty villains who do the mischief. This, of course is wrong and unjust; but how are we to seek out and punish such offenders, and yet these causes all combine to retard horticultural operations, by discouraging those who would otherwise plant trees this spring, and try to renovate those that have been injured.

I usually keep a journal of current events, and scattered through this journal are daily meterological observations; therefore instead of sending you condensed tables of the mean or maximum and minimum degrees of heat and cold, I send you an extended list of observations, beginning with May 10, 1861, and ending April 1, 1862; and these observations go to verify a principle laid down in Fox's Text-book of Agriculture," page 51, viewed in connection with list of temperatures furnished by

Boussingalt, favorable to the particular plants, in the success of which man is more especially interested, as applicable to this section of country. The "principle" referred to is this: "For the cultivation of annual plants, it is only necessary to know the mean temperature of climate during the number of months requisite for the growth and maturation of the seed."

The following is the table of temperatures referred to above. Some of these require a mean *annual* temperature; but some of these crops enumerated require a greater amount of humidity than others, and I think a comparison of my list of observations, with this list of temperatures, will satisfy any one of our capabilities for producing all the crops mentioned in the list:

NAME.	MAXIMUM.	MININUM.
Wheat .	74°	44°
Barley .	74°	59°
Potatoes .	75°	52°
Flax .	74°	54°
Apple .	72°	59°
Maize .	82°	59°
Tobacco .	82°	65°

[Our correspondent's letter was not, we believe, intended so much for publication as for our own personal information; but we have taken the liberty of giving it nearly entire, as any information from the long lost stars of our horticultural constellation, will possess an interest to all our readers.

For the tables and other matter not published, but which will be valuable to us, our correspondent has also our best thanks.—Ed.]

REMARKS ON THE HEATH CONTINUED.

BY DANIEL BARKER, HARTFORD, CONN.

Cuttings of Heaths may be put in at almost any time when the wood is in a fit state, which, according to our experience, is when it has become sufficiently firm, so as to prevent its damping off—in other words, when it is in a half ripened state. Many of the kinds will be found to be in a proper state during the months of June and July; others from August to September. The length of the cuttings will depend on the habit of the species; from the free-growing kinds they may be from one to one and a half inches, while from those of a more compact growth will not exceed more than half an inch; in either case they should be taken from the part where the young commenced its growth from the old wood. Strip off the foliage (very carefully) about half the length of the cuttings. Cut off the lower end with a clean cut, near where it was taken from the plant.

We prefer placing the cuttings in pans four inches in depth, and about six in diameter, in which are placed two inches of broken charcoal, over which is placed a layer of *Hypnum* (Bog-moss), to prevent the mould from running down among the drainage. We then fill to within one inch of the top with very sandy peat, or equal parts fine sandy loam, very rotten leaf mould and pure white sand, all well incorporated together. The remainder is filled to the level with fine white clean river sand, firmly pressed down. After being watered it is in a fit state to receive the cuttings. If there is not sufficient cuttings of one kind to fill one pan, care should be taken to select such kinds as are very near of a habit as possible; for unless this is attended to, some kinds will be found to strike root in a much shorter time than others, and will be very inconvenient when potting off. In planting the cuttings we have found that about half an inch apart is much better than placing them nearer. When the pan is filled it should be well-watered with a fine-rose watering-pot, and placed in a close, shady part of the greenhouse, admitting no air to that part of the house where the pans are placed. For the free growing kinds, during the night, we never place any bell-glasses over them, and not more than six hours during the day; but for those which are more difficult to strike, such as Aurea, Taxifolia, Massonii, Hartwelli and others of similar habits, will require to be covered with glasses during the entire day, but we never leave them over during the night. When they have struck root, which will be easily known by their beginning to grow freely, the glasses should be removed gradually. Some two or three weeks before they are potted out, our plan has been to pot them off singly into the smallest size pots, and afterwards treated in the same way as recommended for seedlings.

According to our practice, young Heaths should never be potted out later than the second or third week in September. If potted after that time they have not time to become established before winter. The soil best suited for the first potting we have found to be one-half good sandy peat, and one-half sand. In districts where peat cannot be procured, we have used one-fourth each of light turfy loam and well decayed leaf mould, with one-half sand, always being careful to drain the pots well with small pieces of charcoal. Cuttings which are not rooted before September, we have allowed to remain in the cutting-pans until the following March, after which they are potted and treated as already recommended.

In conclusion we would remark that this family are less annoyed by insects than most other exotic plants. Still they are not entirely exempt. The green-fly will sometimes attack it, and as some of the more delicate kinds are impatient of the usual remedy (tobacco smoke), we have found it more practicable to use a solution of tobacco water, into which the plants, or parts infected, are dipped. Mildew sometimes attacks the Heath, but this, like the cause of its appearance in all other cases, is owing to damp or stagnation of air. To remedy this evil has not always been found an easy matter. Free ventilation and a dry atmosphere, we believe to be the basis of a certain cure for it; and the application of flour of sulphur, dusted upon the parts affected during the summer. In winter we have used bricks, laid upon the pipes or flues, which have previously been washed with a mixture of lime and sulphur, and which we have found effectual in removing the evil.

LITTLE COST OF BEAUTY.

BY J. W. ZINK, GOVANSTOWN, MD.

WHY is it that there are so many men who own a few acres of land, and seem to have so little taste for rural art, or for any thing that may increase their pleasures or beautify their homes? This may be applied to a great portion of the men around our neighborhood. There are exceptions, it is true, to this, but they are men of wealth and fortune. Of this class of gentlemen I shall not speak, because a man with a fortune at his command, can always have the advantage of every thing he may want; but I refer to men of moderate means. They seem to be perfectly indifferent about the appearance of their homes. Some of these men own fine tracts of land, which are beautifully situated, well watered and highly productive. Some may have gone as far as to plant a small orchard; but here the work ceases. Their houses, for the most part, stand bare and uninviting to the passer by. They do not seem to feel the need of shade around their houses,—not speaking of the great use that trees are in winter, in breaking the cold winds from around them. What a great difference a clump of trees, planted here and there over a neat lawn in front and around the house, would make. A well kept road, with walks and flower borders, adds greatly to the beauty of the house. And, again, they have such little taste about building their cottages. A plain, four-cornered house is all they seem to wish for, without regard to Rural Architecture, neatness or durability. This is attributable in a great degree to the erroneous impression which prevails in regard to cost. A man's home may be made comfortable, neat and pleasing to the eye with a small amount of expenditure, much less than he really believes. The tastes and habits of the man are generally in accordance with the influence which surrounded him when a child, therefore it is very important to keep before the young the outward objects which are calculated to elevate the mind and create a great change among us all, by having tasteful homes.

[Habits of neatness and taste, and a love for natural beauty, are the most economical that any man can inculcate on his family. People who are indifferent about these matters are rarely otherwise than wasteful and extravagant in most other things. There is an instinct in human nature which leads it to protect and take care of that which is pretty and refined; and to be indifferent, or even to feel an abhorrence towards that which has no charms to recommend it. Hence, while the careful parent is wearing away his life of toil, to save every cent he earns, that he may some day have something of a fortune to leave to his children, they are growing up without those habits which alone will lead to a true economy of the rich inheritance he leaves them.

As our correspondent says, it costs so little to beautify one's home, that it is astonishing in view of its many advantages to a family, both bodily and mentally, that it is so often neglected.—ED.]

BROOKLYN HORTICULTURAL SOCIETY.

[We have received from two attentive correspondents, sketches of this exhibition, and, as it happens, from two opposite points of view. Both of them are amateur horticulturists, and they illustrate the difficulty of "pleasing everybody." At the same time, it affords an index of what the "public" want, and we are sure that not only the Brooklyn, but all other horticultural societies, will profit by the hints these communications afford.—ED.]

GOING TO THE SHOW.

BY R.

It was a spring morning, and I felt a gentle rumbling in my heart, when, sitting after breakfast in the basement of my house, ——, Wood St., Brooklyn, Long Island, Kings County, State of New York, I chanced to look up from the paper into the area, and saw the grass a tint greener, in fact a very fine green indeed for city grass. As I saw its blades bend before the breeze, and the sharp light of the spring sun playing in the patches, that rumbling increased—I threw open the sash, sniffed the

morning air, and felt that the earth and myself were newly born. *Resurreximus.* My wife at once divined my state, entered into it with her whole soul, and suggested a visit to the Horticultural Exhibition, just opened. There we could not easily catch cold, and still enjoy nature, both foreign and domestic,—imported and homegrown nature. Done, I cried, and forth we went.

Having never, in all my long life, seen any floral show, properly so called, but often heard talk of them, and read about them in the papers, I felt attracted by the novelty of the thing. In order, however, not to be taken unawares, and to do the thing understandingly, my wife and I, we settled on the road first the object of getting up a flower show, next, second and last, how it should look when gotten up. Wherein we disagreed from the reality, this paper will show. And it is hereby tendered to the general public (into which public the scientific men, and the traders in nature are to be considered as fully merged) with the belief that a discussion of the matter in an impartial way would do good all round, and with the express conceit that any raw outsider like myself might vote himself into the office of Representative of the *General Public.*

To the centre of the city,—to the fine, new, magnificent Academy of Music. What, had that a moveable roof, and got covered with glass? had the stage and the auditorium been made a garden of? were the staircases now terraces, the orchestra a pretty pond; did birds fly about and sing sweetly in the groves of boxes? Were we to take an airing there, something like taking a ride at a riding-school, looking for the time being upon this circumscribed space as all our world; learning the round shape of our globe over and over again, by coming back, in less than two minutes, to the very spot we started from? Were we, my wife and I, to promenade there, in and out of the sinuous walks of the garden theatre, once and again into the public square, under the big chandelier, where the music played and the delighted crowd stood a-gaping, lost in their own fog, through the charms of the sight, of the perfume, and of the sounds? Were we to meet there with this or that friend, and have a delightful chat; topics suggested by the objects round, for instance, Begonias, exterior of physical sciences or new bonnets, as the case may be? Were we to be addressed by some learned man in a popular yet instructive way, and have a delightful half hour lecture—say about the palms: their homes, their uses, how they differ from each other, and wherein they are all one; illustrations furnished by the specimens themselves being brought before the public and taken away in turn? Were we to see the cream of the cream of our neighbor's flowers, taken from out those very greenhouses which we could see from our second story back windows? Were we to read in large letters, and be correspondingly largely surprised, that Mrs. O'Shaughnessy, who takes in washing, and ours in particular, had got the silver medal for the "best varieties of radishes, grown under the most difficulties;" or that Nixon, the second-hand man, round the corner, had received five dollars for inventing—who would have thought it—a new Petunia, called (by himself, and after his old woman,) "Marian Lydia Nixon? Were we—

But no, I was to relate what I *saw*, not what I *expected* to see. Up the broad stairs, then, into a high room, built and decorated in the stern gothic manner. Such a room as might have served the lord of the castle to feast his vassals in, or which might be used now-a-days for a church. One glance and my eyes took in the whole field. My wife looked at me,—I looked at her. We felt taken down considerably, many pegs. What did the whole exhibition amount to? A few, but very few plants in pots; a few cut flowers, far on the road to decomposition; some hanging and some standing baskets, all of intensely plain shapes; and one, say one solitary single plate of strawberries. After our walk, and after our disappointment, we naturally felt as if we would like to sit down and come to. But—there was no chair, and humanity had evidently to "MOVE ON."

After admiring the beautiful orchideæ, the purpose of which in nature seemed to me as mysterious as the shape of their flowers, I proposed to look at the vegetables.

There would be all the early vegetables in fine array, I fancied, labelled with names and names of their growers, and with the stand of these particular growers in market, where the General Public could go and buy them, thus rewarding themselves and the exhibitors in a very useful and practical way. But in vain did I look for vegetables—there were none. Do they belong to agriculture or horticulture? do they grow in fields or in gardens? My wife and I, candidly we confessed, could not solve the problem.

In the centre of my area, mentioned in the beginning of this paper, there stood an evergreen which the gardener who put it in called an Arbor-vitæ or the Tree of Life. It departed this life, however, in the course of the winter, I am sorry to say, and so I could not find out whether this tree of life would ever have come up to my expectations. Per-

haps something else would do better. Let us look at the Evergreens. Instead of one tree that might ere long reach up to the roof, I intended to plant half a dozen dwarf trees, something new, from distant countries, something that was not yet in the street.

I tried hard to find the Evergreens, and found—one little pot of a variegated specimen. I could have carried away in my pocket the whole exhibition of Evergreens.

But the luscious grapes; the velvety peaches; the nuts and the whole line of forced fruit, which the rich and the poor so much love in winter, but which the rich only eat; let them feast my eyes, if not my palate! Where are they? They are—that is they were—at home; they certainly were not in the exhibition. I gazed all the longer on that solitary plate of strawberries, and took away a large noseful of its aroma. Thanks to him who sent them there!

We wandered around the tables, and soon had seen the show. Entering into conversation with a gentleman wearing an official badge, in order to draw him out a little, I was told that the exhibition was a fine one, much better than expected. That finished me off—my philosophy had reached bottom—I have the signal to my wife, and we forthwith sailed home.

On our way home we settled the matter, first, as to the object of horticultural shows,—and they were the same as we had laid them down on our way there,—second, next and last, that these objects were *not* visible in this meaningless show.

A GLANCE AT THE BROOKLYN HORTICULTURAL EXHIBITION.

BY J. P., ORANGE, NEW JERSEY.

If your readers wish to read any thing more about the present exhibition than the official report, which I suppose will be found as usual at the end of your number, then, Mr. Editor, I will make the following few remarks about it.

It is a gratifying point to know that it is held in the justly renowned Academy of Music, which fine building thus bids the Goddess Flora to join her heavenly cousins, the Muses of Comedy, Song and Tragedy.

Another gratifying point is the influx of visitors, the fairer portion of humanity forming as usual the majority of them. It is to be hoped that the exhibitions thus become more and more a success in a pecuniary view; as they are for a long time a success in the cherished purpose of fostering the taste for horticulture.

If I was called upon now to name *the* plant, which of all others commands the visitor's attention, I would not hesitate to say that it is the *Cyanophyllum magnificum*. A specimen over five feet high, with leaves as long as a child's arm, and of the finest and closest velvety nap. Tints a sober, deep and beautifully shaded green.

The exhibition excelled also in a few but very fine blooming *Orchidaceæ*, doing the utmost credit to their grower.

As a novelty to me, and perhaps to most of your readers, I mention an *Alocasia metallica*, from Borneo. It bids fair to beat any thing in creation for repulsive looks. Its leaves are of a dull color and metallic feel; its flower looks like the head of a snake.

A *Biota pyramidalis aurea variegata*, seemingly a dwarf, was a beautiful variety of the golden Arbor-vitæ. The variegation for once did not look like a disease of the plant, as so often is the case.

A *Daphne Cneorum*, a low evergreen—a creeper—and labelled a "fragrant," seemed to me the very thing for rockwork, and one more auxiliary to hide ugly places and stones in one's grounds. Will it stand our winter? Is its propagation easy? Will the Editor be good enough to answer.

[If we remember right, Mr. John Sherwood of Bristol, Pa., finds it hardy in his nursery.—ED.]

Some very fine Azaleas were exhibited, enormous heads, perfect successes to the untiring gardener. As a matter of taste, I would beg leave to differ and find fault with any plant where I can hardly see any stem or any leaves, and where I see nothing *but* flowers.

A very nice little collection of ferns attracted my notice; among them the interesting *Pteris argyrea* and *tricolor*, the former with silver, the latter with three-colored stem.

A new Petunia, *Zouave*, struck me as one of the most noticeable among the new kinds.

Nor must I forget the large collection Carnations, exhibited by Dailledouze & Zeller, French nurserymen of Brooklyn. They formed a table themselves. The Carnation is not as easily grown in our country as in Europe, and these gentlemen deserve the more credit for their efforts in popularizing it.

Enormous hanging baskets invited examination, the wire having entirely disappeared in the moss and the plants; the plants seeming literally to hang.

Success to the promoters of this fine exhibition.

IMPROVEMENTS IN AQUARIUMS.

BY W. S., PHILADELPHIA.

I SEND, you a sketch of a frame I have had made to fit over my aquarium, to hold plants in pots, surrounded by moss, after a hint thrown out by yourself in the *Gardener's Monthly*, some months ago. I thought it would apply as well to aquariums as to balconies, as you suggested, and am quite pleased with the result. You perceive that it is a wire frame with four feet, so made that it fits over the four corner projections of the aquarium, so that it can be taken off or put on at pleasure. Moss is placed all around the inside of the wire frame, entirely concealing the pots in which the plants grow, which have the appearance of being baskets of cut flowers. Their positions are occasionally changed, which favors the illusion.

The evaporation of moisture from the aquarium seems to favor the growth of plants, no doubt favoring the damp atmosphere which all room plant growers so much desire, as you will see, by the sketch, my aquarium is rather a large one. On a small case, perhaps pot plants could not be so well employed as in mine; but selections of cut flowers set over them, where pot plants would be too large, would no doubt have their flowers preserved to a much longer period than they could any way except by the use of entire glass coverings over them.

SKETCH OF PETER LEGAUX.

BY J. R., SPRINGDELL, PA.

IN the May number of the *Gardener's Monthly*, I with pleasure and delight observed the name of Peter Legaux. It was my privilege, when quite a boy, to enjoy the friendship of the sage of Spring Mill, Montgomery county, Pa. Mr. Legaux was quite intimate with my father, (they were both highly educated Frenchmen). Oft have I seen the old Patriarch take his breakfast at my father's table, and which consisted of a coffee-bowl of Claret, with bread soaked in it,—this was his accustomed fare. Always glad to see the old sage, the debonair, the pink of politeness and amiableness, with his

sandy wig, curled around its margin, his wide extended nostrils, well charged with the Rappee, his tall and slight figure, his bright eye and prominent cheek bones, his familiar deportment, his cordial invitation to me to visit him, made me so impatient that I could scarcely wait till the Dog days arrived. Frequently have I been under his care at the Vineyard, and for weeks at a time; but as I was but a child comparatively, my attention was more particularly directed to his extensive collection of tools, lathes, &c. He was an extraordinary genius, and his knowledge of various sciences extensive. He could, out of deformity in wood or metal, create beauty and symmetry; and at night, when the skies were unobscured by clouds, with his powerful telescope would teach me, or endeavor to instruct me, in the sublime science of Astronomy; and I now have two momentos, which I cherish exceedingly, made by his agile hands, and presented to me when I was but a little boy.

Mr. Legaux was, I believe, one of the first men enthusiastically devoted to the culture of the grape in our country on an extensive scale, (Vineyard). My father did occasionally, through the press, at that time, write favorably and sanguinely on the subject, in behalf of Mr. Legaux's enterprise; but Mr. Legaux unfortunately favored exotics (instead of indigenous grapes), and being unable to battle with our variable climate, severe frosts, etc., his enterprise failed, though oft repeated. Still his efforts, unwearied as they were, and determined as he was to succeed, renewed failure were the sad consequences; and I believe ultimately the venerable sage was overwhelmed with pecuniary troubles.

As for details of culture, etc., I was too young to have noticed or regarded the various untiring efforts of my good old friend. I presume there are living at or near Spring Mill, some one who might be enabled to enlighten you on the Legaux Vineyard. Both he and my father are with the dead.

Mr. Legaux had numerous friends, as the Acts of Incorporation show, 1793, 1800.

PEGGING DOWN ROSES.

BY C. D.

I saw a method of training roses last year which I believe has not been noticed in your magazine, though I am pleased to say it is not often you are caught lagging in the rear of useful hints for your readers. This is neither more or less than simply pegging down roses so as to cover the whole surface of the soil in a bed, instead of training them up to stakes in the usual way. Strong forked branches of trees, cut so as to make pegs of them, are used, and the beds are beautiful in the extreme, if such beauty can be aptly termed extreme. The beds I saw had but one kind in each,—one I remember was of *Louis Phillippe*, this was crimson; and another was *Cels*, nearly a white. There were also some beds with Hybrid Perpetuals, which, though not making such a brilliant effect as the former kinds, were very pretty indeed, and they seemed to flower much more freely treated in this way than when grown as usually upright.

[We are are not sure that we ought to plead guilty to the charge our correspondent brings against us; for we have an indistinct impression of something of the kind having appeared in our pages. At any rate, we are none the less obliged to her for bringing it prominently into notice, for it is indeed a very effective way of growing roses. We saw last year some trained this way on the beautiful grounds of Joshua Fisher, Esq., and of Captain Ingersoll, the latter under the entire management of Mrs. Ingersoll, and they were as lovely as it was possible for roses to be.

With regard to the free flowering properties of Hybrid Perpetuals noticed, as following this treatment, we were informed that this was attributed to the practice of cutting off the blooms as fast as they faded, though our correspondent is no doubt right in her surmise, that pegging down has some influence on their productiveness.—Ed.]

CHEMISTRY OF THE GARDEN.

BY WM. BRIGHT, PHILADELPHIA.

In a previous article, under the above heading, we made some inquiries intended to excite a discussion respecting the probable uses of ammonia, or nitrogen, or the action of these substances upon plants. We now propose to make some similar inquiries and suggestions respecting Phosphoric-acid and Super-phosphate of Lime.

It is generally believed that Phosphoric-acid, or acid Phosphate of Lime, is directly taken up by many plants, and is one of the most valuable manures we possess for grass and grain crops, and especially for turnips. The results obtained in England by the use of bone dust, and especially by bone dust dissolved in Sulphuric-acid, for turnips, would seem to leave no doubt of the direct benefit to be derived from the use of this substance as a manure, for this crop. The very extended use of this manure on a great variety of soils and crops, in this country, and the general belief in its value, would also seem to admit of little question as to its real usefulness; and

yet there are many persons well informed in Agricultural Chemistry, who not only deny, but think they can show, that Phosphoric-acid in its perfected chemical form, is not made use of by plants, cannot be taken up by them, is of little or no service to them, and that all the acid of this description found in plants, upon analysis, is formed within the plants themselves, from Carbonic-acid, or other materials, by vital and assimilative action, that it is in fact, a product of plant life, and not obtained from the manures containing Phosphoric-acid directly applied and taken up.

The first hint we observed on this subject was in a lecture given by Prof. Johnston, at the Yale Scientific Lectures, who suggested that it was quite probable a grand mistake had been made in the supposed value of Super-phosphate of Lime as a special manure; and that much, if not all the effect apparently obtained from it, might possibly be due to the action of the Sulphuric-acid employed in its preparation.

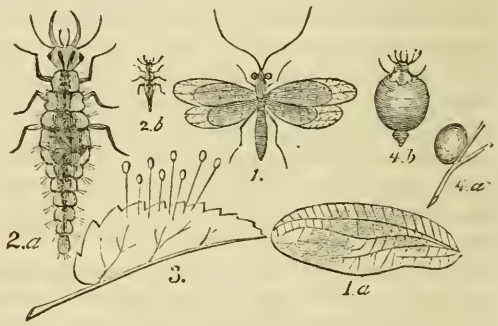
The next suggestion we received was from Mr. D. E. Paynter, of Philadelphia, an intelligent operator in the chemistry of manures, who has for several years argued that plants readily form Phosphoric-acid, and that the most valuable manuring agent is Sulphuric acid, or Sulphate of Lime, or, more definitely, *soluble sulphur*. Ammonia, of course, is not to be disregarded; and when you have plenty of Sulphate of Ammonia, or more precisely, *soluble sulphur and ammonia*, you have the two greatest, and perhaps the only two necessary agents for the restoration of exhausted soils, and the growth of maximum crops, for an indefinite period of time. Mr. Paynter argues that all tolerably good soils contain plenty of potash and other salts, which sulphur is capable of liberating, and that even ammonia will be obtained from the atmosphere and from rains and dews, and hence only so much ammonia need be used as will assist the earlier processes of germination.

We are strongly inclined to think that there is something important in these new views respecting the uses of Phosphoric-acid, and we throw out these remarks for the purpose of inviting comment, and further experiments with Bi-sulphate of Lime, or soluble sulphur, and also with the hope that Mr. Paynter will furnish the *Gardener's Monthly* with some extended remarks upon his theory of the relation of plants to Phosphoric-acid, and the probable action of Sulphuric-acid and soluble sulphur, upon vegetable growth.

Mr. Paynter has also invented a method of producing soluble sulphur in great abundance, very cheaply, and in this substance may possibly be found the long-desired remedy for mildew on the grape vine and other plants; for if *insoluble* sulphur is a partial remedy for mildew, as "NOVICE," and many other grape growers, seem to think, sulphur perfectly soluble in water, and perfectly prepared to become the immediate food of plants, may be a much more perfect preventive, or curative agent. Let us have something further on the subject from some of our "experts."

AN INSECT FRIEND.

BY S. S. RATHVON.



CHRYSOPA HARRISII—FITCH.
(Golden-eyed Lacewing.)

MR. EDITOR: The little insect you inclosed to me in a letter some time ago, in some manner made its escape before I had an opportunity of observing it in all its stages, but presuming it to be the larva of our most common species of "Lacewing flies" in Pennsylvania, I will proceed to give you a short description of it and them, so far as my knowledge goes.

The *Lacewings* constitute the family *Hemerobiadæ*, belonging to the forth *order* of Linnæus called *Neuroptera*, from the two Greek words, *neuron*, a nerve, and *pteron*, a wing, meaning reticulated or nerve-winged insects, of which our common Dragon Fly or "Devil's Needle," is the most common example.

Dr. Asa Fitch, in his "Report of the Noxious and other Insects of New York," enumerates and describes eleven species of *Hemerobius*, twenty-two species of *Chrysopa*, and one species of *Meleoma*, known to him, as inhabiting the United States, all of which belong to the family and order before named; and all of which, also, so far as their habits are known, may be ranked among our insect friends. By far the most common species, however, in this section of our State, is the one which forms

the subject of this paper; which Dr. Harris referred to as *Hemerobius perla*, from its resemblance to the European species of that name, regarding it as identical, but from which Dr. Fitch thought it differed sufficiently to constitute a new species, which he has dedicated to Dr. Harris, in which I think he was right, for I have frequently had specimens of both the foreign and the native insects before me; and believe there was sufficient room for such a separation.

So far as the habits of these insects are known, the females deposit their eggs upon the leaves of fruit trees and shrubbery, each egg being separately attached to a slender flexible footstalk or peduncle, raising them from half an inch to three quarters of an inch from the surface of the leaf or other substance to which the lower end may be attached, as seen in figure 3, of the accompanying illustrations. When the young are excluded from the eggs they crawl down the footstalk to the surface of the leaf; but as to how they subsist in their infantile state is not so apparent, for, although I have often looked upon the mature or half-grown larvæ slaughtering the aphids without stint or mercy, I have not been able to bring the quite young to attack them; indeed, they seemed rather to be seeking something among the aphids, and did not seem to be conscious of the latters presence. In this I am corroborated, I find, by Dr. Fitch, who says that he has found the larvæ under consideration with its mandibles inserted in insects eggs, from which they sucked out all the contents; and for which purpose the mandibles are hollow like the fangs of a venomous snake, and through which it may also be able to infuse an irritating virus into any wound it may make. Dr. Fitch presumes that it is upon this account that the careful mother of these insects secures her eggs from destruction by the progeny of her own race, in affixing them to the end of a smooth and slender filament, entirely out of their reach.

Fig. 2*a* is an enlarged view of the larva, and 2*b* is the natural size of the young larvæ above alluded to. The mature larva is about twice the length of fig. 2*b*. Fig. 4*a* is about the size of the coccoon which this insect spins, and which is about the size and color of a common pea. Fig. 4*b* represents the insect either in the act of spinning, or attempting to escape from the coccoon; as it is copied by our artist from a published drawing, it may without much violence be taken for either. Fig. 1 is the perfect insect, which expands from one inch and an eighth, to one inch and five-eights from tip to tip of the wings, with a body from half an inch to three-fourths of an inch in length. The color of the entire insect is a pale green or a greenish yellow, with various specific markings, by which the various species are designated. Their eyes are prominent, and of a bright gold color or a bronze, but on long keeping they loose this metallic lustre in a great measure. Fig. 1*a* is one of the anterior wings, but the neurations of these are different in different species, but in all they have the appearance of very fine greenish glossy lace; at least this is the case with those that belong to the genus *Chrysopa*. Some species deposit their eggs in pairs, or a single one here and there, whilst others deposit them in groups or clusters, as seen in fig. 3. The antennæ are long and filliform, the legs slender and the flight sluggish and irregular. In the mature state it is doubtful whether they partake of food at all, but as larvæ I have seen them suck out the contents of an aphid and cast the empty skin aside, as fast and as effectually as a boy would suck out the pulp and cast away the skins of grapes. Nor do they confine themselves to aphids merely, but they attack indiscriminately other small larvæ, and also the eggs of other insects. Dr. Fitch suggests, that if introduced into wheat fields, they might be beneficial in destroying the *Wheat-fly* or *Midge*, which attacks the grain in its milk state. The two last segments of the body of this insect forms a kind of sucker by which it is able to hang to the sides of glass without the aid of any of the feet; and it is by means of this caudal extremity that, spider-like, they spin their neat compact little coccoon, with astonishing mechanical skill, and which seems entirely too small to contain so large an insect as comes forth. Some species bring forth two broods in one season, and these remain in the pupa state about two weeks; but ordinarily they remain in the coccoon all winter, and come forth in the months of May and June the next year, having spun themselves up in the months of July or August of the preceding year.

The illustrations are by Mr. Stauffer, of Lancaster, and accompany this sketch in order that common observers may become familiarized with the friend and auxiliary of man in the insect world, and enable them to make the proper distinction between friend and foe. For this reason, also, I have given a magnified figure of the larva, in 2*a*, because it is in that state in which the insect is so beneficial, and is often met with.

I referred to this insect under "No. 20," in my essay, read at West Chester, on the 13th of June last, where specimens were exhibited before the "Fruit Grower's Association of Eastern Pennsylvania;" and description of all the species may be found in "Fitch's Reports," vol. I. pp. 75–96.

The Gardener's Monthly.

PHILADELPHIA, JUNE, 1862.

☞ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box 406 Philadelphia."

☞ Persons sending two new Subscribers for 1862 in addition to their own, with $3.00, can receive a copy of our First Volume, (1859) free. All persons who have paid their subscriptions for 1862, by sending two new Subscribers and $2.00, can receive a copy of the same.

ORCHARDS---CROPPED OR UNCROPPED.

A QUESTION of immense importance to the fruit grower has for some time been under discussion, namely, Should orchards be kept cultivated with other crops, be kept hoed and cleaned without other crops, or be laid down as a pasture or be kept in grass? We have forborne for some time any fresh allusion to the topic, as it is one worthy of discussion without prejudice, or with an influence in favor of forgone conclusions; as an orchard in bearing is not the work of a day, and we should be slow in adopting a practice either way that may injuriously affect our trees, without a conviction, founded on some pretty sound reasoning that is a correct and proper one.

There are several good reasons in favor of cultivating and cropping an orchard. A soil that has a loose upper surface such as the cultivator leaves, is always cooler and moister in summer than one which is suffered to lie in a hard and neglected state. This must be conducive to free growth, and to a full and perfect setting of the fruit. Another good point is that in cropping, manure is generally applied, and a portion of this plant food is appropriated by the fruit tree. This also stimulates an active growth, and in certain periods of the tree life is of course a benefit. There are no other advantages claimed for this course, and they are summed up in this way: Cultivating and manuring make the trees grow.

On the other hand, vigorous growth is not always emblematic of health and productiveness,—rather the reverse, for vigorous growth is antagonistic to abundant fruitfulness. A tree that bears young is soon exhausted, becomes stunted, and is never worth the room it occupies; while one that is in a continued state of vigorous growth rarely bears fruit in any abundance: and this is the advantage claimed for laying an orchard in grass, that this exuberant growth is held in check, while, by annual top-dressings, a sufficiency of nutriment can be furnished the trees to keep up a sufficiently vigorous growth to maintain the productiveness of the tree.

We have advocated, and still defend this practice, The writer was raised in an orchard. Circumstances so ordered that trees and plants were very near the sole companions of his boyhood days. Not until the threshold of manhood was reached, had he much other amusement or occupation than to note the beauties and attraction, the wants and wishes of his vegetable friends. Yet, from that early day to this, he cannot remember an instance where fruit trees, in a well-kept and cultivated garden, remained perfectly healthy for a long period, or ever produced but a very moderate crop of fruit,—the Dwarf Pear alone excepted, and this reservation he is not sure need be made under all circumstances. On the other hand, orchards in rich pastures, or in well-cared for meadows, have uniformly been as healthy, moderately vigorous, and with a prolonged productiveness as the most exacting fruit grower could desire. And since the existence of this journal, we have noted all that has appeared on every side of the question, both by actual observation, and from the experience of others; and we cannot but conclude, that the uncropped orchard has the best of the argument, all things considered.

Advocates of this practice are at times charged with inconsistency. "You oppose great vigor in fruit trees," say some, "and recommend root-pruning as a corrective; yet, when we root prune with the cultivator, you oppose the practice!" But root pruning and fibre pruning are different matters, and have different results. The one checks growth,—the other increases it. Such is the consequence in practice, and we need not enter here into an argument to explain why it is so; our limits will only permit us to say, as the result of a careful examination of the subject, that when trees appear weak and stunted, cultivate and manure until you get them into a fair free growth; after that seed the orchard down in grass, bearing particularly in mind that annual top dressing or mulching under each tree, must by no means be neglected.

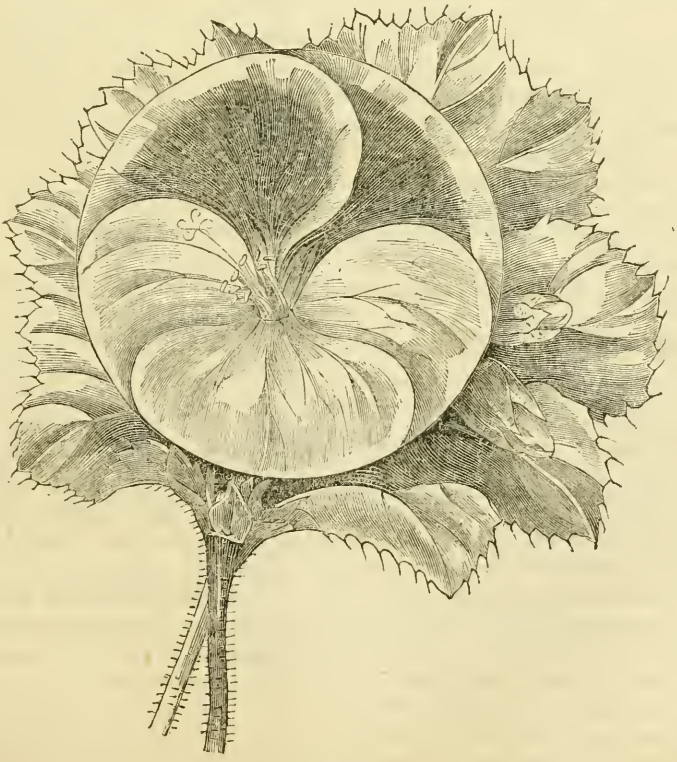
FRUIT TREE BORERS.

A CORRESPONDENT remarks that he thinks it a mistake, that borers will not deposit their larvæ into the branching roots of fruit trees; but he expresses great "faith" in the practice described last month, of barcing the roots, "for," he observes, "there is far less danger when some of these roots

are attacked, than when 'the main artery' at the collar of the tree is seized." He makes the valuable suggestion to plant all fruit trees on little mounds a few inches above the main surface, so that as the trees grow, and the mounds find their natural level, the main roots will be like those of forest trees, in general, a little above the surface, and all danger of the collar being attacked then removed.

FLORISTS FLOWERS.

The astonishing number of new varieties of Gladiolus brought to notice during the few past years, demands that they be placed in the position of Florists flowers, and, like Florists flowers, come under some definite rules of recognized beauty. An universally conceded point of beauty in any "Florists flower" is rotundity of shape. Angular forms are generally objectionable. The nearer a Dahlia, Pelargonium Pansy or other flower describes a circular outline, the more is it prized by the connoisseur in floral perfection. This is a point particularly wanting in most varieties of Gladiolus. Another mark of a good flower is substance. Flimsy petals look cheap and common; while glossy textures, firm and rich as velvet, always please, as something choice. Plaits or folds in the petals are also objectionable, as they convey the idea of imperfect development. A fringed edge, providing the body of the petal is flat, is not a defect, but rather adds to the beauty of the flower; though, with the exception of Azalea, this character is not yet associated with Florists flowers. Color is a more difficult matter to deal with, though what are usually called "selfs," or flowers of one color, are not valued unless of some bold or striking tint. Pale "selfs" have a faded look that seldom produces much effect. Where there is a white ground or base color, pale tints add more to the charm than rich colors do. Usually a bicolored flower looks best when the two colors blend gradually with each other; but in bold tintings a distinctive mark between each is considered more beautiful. The former rule will probably hold good with most Gladiolus, while in highly colored flowers, as the Pansy and the Pelargonium, a clear line of demarcation between the ground color and the marking, is an imperative demand of the florists rules.



The Gladiolus affords room for great improvement. Other Florists flowers seem to have so nearly reached perfection, that we wonder if anything more can really be done for them.

At a recent hurried visit to Mr. Buist's greenhouses, we had the pleasure of catching his splendid collection of Pelargoniums in full bloom. We give a sketch of one on the opposite page, and if any of our fair readers, skilled in the mysteries of beauty, and the arts of winning ways, can point out how its style may be improved, the communication will be particularly welcome to us.

While on the subject, of Pelargoniums we may add, that of the kinds here in bloom, new or old, those that please us best were Mad. Hane, Firebrand, Napoleon III., Capt. Lebaux, Cherub, Jane Odier, Topsy and Vesper. Alluding to the new crimped style of edging for Azaleas, we may also add, that the number of new kinds now in existence, as Mr. Buist's collection showed, was much greater than we had supposed. Beautiful as they are, we should not like to be without the older kinds, as glorious specimens of Pride of Dorking, Glory of Sunninghill, and Petunæflora, here in full bloom, effectively reminded us. Mr. Buist seemed fully to understand not only the value of the idea, but is successful practice also, of growing large specimens in small pots.

We make these remarks on properties of flowers, as hints for the coming Gladiolus season, as we consider that there are far too many of them not sufficiently distinct from each other and we would like to see a standard set up for them, and those which do not come up to it, whether they be "Dukes, Lords, or Commissioners," cut from our lists, and their services dispensed with.

Scraps and Queries.

☞Communications for this department must reach the Editor on or before the 10th of the month.

☞The Editor cannot answer letters for this department privately.

Mead's Seedling Grape again.—At page 124 we quoted the report of the Lancaster Grape-Growers,—"Diana maintains its reputation. Mead's Seedling similar but superior to the Catawba," to show that these gentlemen, with the specimens before them, and engaged in actual comparison, while struck with a "similarity to Catawba," had no thought of confounding it with the Diana along side of it. In the May number of *Hovey's Magazine*, page 218, to show what it calls "Pomological Wisdom," it carefully quotes the *last part* of the sentence, ignoring the *allusion to the Diana* altogether, and waggishly asks, "What has this to do with it?" Meaning the distinction between Diana and Mead's Seedling.

It has simply this to do with it, that parties who, with as good claims to Pomological eminence as the *Magazine*, and with specimens before them, yet suspecting no similarity with Diana, are more likely to be "infallible," as it says, than one who gives no reason for expressing "no doubt it is Diana under a new name," but the singular one, that during the first three years of its seedling existence at Lowell, no one in Massachusetts heard of its good qualities!!

We may be wrong; Mr. Husmann, President Morse of Missouri, the Lancaster Grape Growers, may all be wrong; and Mead's Seedling *may* be yet Diana,—for all things are possible, even to a three year seedling grape being well known for its good qualities,—but the way the *Magazine* attempts to prove their error, is the acme of absurdity, and we are sorry that we have bestowed so much space on such trifling.

Botanical Works—*Amateur, Toronto; C. W.*—What is the best book on Botany for a beginner?(1)

What book is there which gives a full description of green and hot-house plants, their cultivation and mode of propagation, something on the plan of "Meehan's Handbook of Ornamental Trees," which by the way, is a little treasure, it is so comprehensive and so concise. I have often regretted that it did not embrace the shrubs also. Is there any book of the kind upon shrubs.(2)

[1. Gray's Botanical Text Book.

2. Buist's Flower Garden Directory, and Breck's Flower Garden are the nearest approach to what you want. There is no work on shrubs of the character desired.]

Strawberry Edging—*Subscriber, New York.*—I want to *edge* my kitchen garden with strawberry plants, (large size, if I can), without runners. What kind do you recommend, and best time to put out.

[The bush Alpine is the only kind that really does not run; but that is a small kind. Of the large varieties, Oscar appears not to run much; but we suppose this is not a general character of it. Plant in September.]

Borers in Trees—*B., Lancaster, Pa.*—We do not believe the borer will entirely avoid the roots

of trees when the collar is exposed, though it is probable; but even if it do, less injury will result to the tree when one or more of these small courses are attacked, than when the main artery, as we may term the collar of the tree, is the point injured.

York Imperial Apple.—*Edward J. Evans & Co., York, Pa.*, write: "In your notice of specimens 'York Imperial' sent you, in May number of *Gardener's Monthly*, you make us inquiring if it "can be recognized as any known variety." Either we, in our hasty writing, put our inquiry where we did not intend it, or you have misapprehended it. Our inquiry was intended to be about the so-called 'Lancaster Pippin' sent you, and not the 'York Imperial,' of the distinctiveness of which we have had no doubt."

[On referring to the note, we find the mistake ours,—misreading the letter, which was plain enough. We regret the error, as it led us to pay little attention to the "Lancaster Pippin," and have been carefully preserving the former. To-day (May 15th) we cut the last one left, and find it better than the ones tested. It would no doubt keep a year and still be excellent.]

Inarching Magnolias—*K., Newton, Mass.*—What is the proper time for inarching Magnolias?

[This is best accomplished when the young wood of the scion is about half ripe, worked on the half ripened wood of the season's growth. In this region, this would be in July or early August, and the union perfect before the fall of the leaf.

Delaware Grape Cuttings—*W. B. L., Salem, Ind.*—By putting these in a cool, damp, and shady place for ten days before planting, they do better than if put in at once from the vine. No grape propagates freely from eyes set out in the open ground. They would do this way under hot-bed sash. Eyes are cut an inch below the bud, and close above it, and set upright, down in the soil to the bud. There are many "fancy" ways of cutting grape buds, and of inserting them in in the soil, all unnecessary.

Laborer's Cottages.—Mr. Geo. D. Rand, who furnished the drawings for us of the octagonal dwelling, surrounded by glass structures, receives numerous enquiries concering similar buildings. He will soon be prepared to furnish such specifications to all applicants, and where several copies are wanted, he can afford them at $10 each.

Name of Plants—*W. R., Portage City, Wis.*—A dried scrap, about the sixteenth of an inch in length, appears to be Daphne Mezereon.

Petunia General McClellan—*From Mr. C. B. Miller.*—A double, like the single Zouave. The best double we have yet seen. Raised by J. Cadness of Flushing.

Couve Tronchuda—*L.*—This is a vegetable of the Cabbage tribe of Spanish origin, sometimes called Braganza Cabbage. The *leaf stalks* are the parts eaten. These are very thick and succulent, white, and when properly prepared, esteemed a delicious dish. It is prepared in the same manner as sea-kale or asparagus, and somewhat resembles the former vegetable in taste when cooked.

Books, Catalogues, &c.

Cotton in the Middle States. By Dr. Geo. Emerson. Philadelphia, 1862.

This is a small pamphlet of twelve pages, giving the history of cotton in the United States, showing that it has been successfully grown in the Middle States, and the probability of its profitable cultivation again therein. Also complete directions for cultivation.

The main question, of course, with those to whom the pamphlet is addressed, is the one of profit. The materials at the author's command, on which to form a judgment, is, from the nature of the case, limited, and hardly sufficient to warrant any one in experimenting largely.

He refers to the fact, that land in the south, producing but $100 worth of corn, produces $250 worth of cotton,—a difference of $1500 in every one hundred acres in favor of cotton; but, as the science of manuring is not understood in the Cotton States, where little other stock but slaves are kept, what is lost in the comparison of corn against cotton there, should be placed to the credit of corn against cotton in the north, and the comparative result is greatly altered. Then in favor of cotton, they have three months of season favorable to the perfection of the plant which the Middle States have not, but which has yet sufficient to ripen corn to perfection.

We saw last year careful experiments made in Montgomery county, Pa., fifteen miles from Philadelphia. The plants were sown in a hot-bed, in February, and advanced in three and four inch pots, like Egg-plants. Middle of May they were set out in the open air. They grew vigorously. About July the first flowers appeared. The bolls of cotton were just bursting open from these first flowers,

when the first frost arrived; and though there were scores of immature balls on each plant at this time, none of them came to perfection. There were probably two hundred plants; but not over a quarter of a pound of cotton was the product. The experment has not been repeated this year.

We fear the only way to raise cotton in the Middle States, will be by the discovery of improved and early breeds. But, unfortunately, most early varieties of any thing are comparatively unproductive. Six weeks, or Canada Corn, can be successfully raised very far north; but what does it amount to when raised?

To guard against famines, it is well to know what we can do, and we would not discourage such laudable attempts; but we fear going into extensive cotton culture in the Middle States, with a view to permanency and profit, will lead to disappointment.

Open Air Culture of the Vine: A Practical Treatise on the Garden and Vineyard Cultivation of the Vine, and the Domestic Manufacture of Domestic Wine, &c. By John Phin. New York: C. M. Saxton, Publisher, 1862.

This is a well gotten up, and profusely illustrated work of 375 pages, and does credit to its publisher.

The author, in his preface, disclaims any attempt at originality; his object being "to collect the scattered information which exists on the subject in periodicals and kindred works, as well as amongst practical men, and to put it into such a shape as may prove useful to the amateur and the Vine-dresser." This object the author has creditably accomplished, and the result is a work of reference that will be a valuable addition to the libraries of all who take an interest in the out-door cultivation of the vine.

Silliman's American Journal of Arts and Sciences, for May, has a continuation of Dr. Asa Gray's enumeration of the plants of Dr. Parry's collection in the Rocky mountains in 1861, amongst which are several new ones, described here by Dr. Gray for the first time. There is also a very interesting sketch of the "Colorado River of the West," in review of a report to the Secretary of War, by Lieut. Joseph C. Ives and Captain A. A. Humphreys of the Topographical Engineers.

In the Geological Department are several interesting articles—one on Rocks in connection with the Limestone Rocks of Michigan, by Prof. Winchell of Ann Arbor.

The other matters connected with the different branches of science possess their usual interest.

New or Rare Plants.

Vriesia splendens.—Last month this beautiful and rare stove plant was in bloom in Mr. Fahnestock's greenhouses in Philadelphia, as represented in the accompanying sketch.

It is allied to the Pine-apple tribe, and one of the most interesting, as, in addition to its pretty flowers, it has handsome variegated foliage.

Abies microsperma. Lind. *The Small-seeded Spruce.*—This is one of the Conifers sent home by Mr. J. Gould Veitch, who found it at Hakodadi, and who describes it as a tree 40 to 50 feet high.

The under side of the foliage very glaucous and resembling the Spruce Fir in point of color; but the leaves are as long as those of Abies amabilis, and perfectly silvered underneath.

Mr. Gordon's description in the Supplement to the "Pinetum" is as follows:—"Leaves solitary, about one inch long, and three-quarters of a line broad, more or less arranged on the upper side of the branchlets; linear, narrow, flattened, and terminating in a small prickle, or somewhat blunt point; bright green above, and glaucous below. Cones cylindrical, 2¼ inches long, and three-quarters of an inch in diameter, and as broad at one end as the other; scales loose, rectangular, with the apices toothed; bracteas very small, ovate, and terminating in a spine or mucro. Seeds pale, cinnamon-colored, one line long, with ovate wings two lines long, sometimes acutely notched on the margins."

Dr. Lindley considers it "a beautiful tree, quite unlike any other Spruce, with slender delicately-toothed cones, as broad at one end as the other, and the smallest seeds of the genus."

Specimens were sent home by Mr. J. G. Veitch. —*Cottage Gardener.*

The following new plants we find noticed in the *London Gardener's Chronicle* as being now ready:

Abies firma (Zuccarina).—A perfectly hardy Evergreen tree, found in the Midland and Northern provinces of Japan, from whence it was introduced by Mr. J. G. Veitch. Growing to a great height it forms a tree of noble aspect, and is one of the most useful and generally employed timber trees in the Japanese empire.

This most distinct and beautiful species belongs to the Silver Fir section.

Amaranthus melancholicus *var.* ruber.—A plant with striking blood-red foliage, introduced by Mr. J. G. Veitch from Japan, where it was selected by him from amongst many other varieties, as the one most valuable for flower garden decoration and other ornamental purposes; but particularly as an edging, or ribbon border plant.

Its habit is very compact, attaining a height of about 1 foot, and the bright shining color of its leaves gives it a decided superiority over any other fine foliaged bedding-plant. It will probably supersede the Perilla Nankinensis, and all other plants of that description.

Euonymus radicans *fol.* variegatis.—A pretty little shrub received from Japan, of neat habit, with small ovate leaves of a bright green, blotched and margined with silvery white, and perfectly hardy in this country. Its dwarf habit and distinct variegation will render it particularly useful for forming edgings to beds and covering banks and rockwork.

Eurya latifolia variegata.—A Japanese shrub of good and compact habit, and remarkable for the beauty of its fine variegated foliage. It has acuminate leaves of a dark green color, finely edged and blotched with white, and flushed with fiery orange red.

Libocedrus tetragona, (Endlicher.)—This fine and distinct hardy Conifer is a native of the Andes of Chili, where it is found just below the snow line, forming an evergreen pyramidal tree of great size and beauty, and producing excellent and durable timber, which is said to be almost imperishable.

Mimulus cupreus.—A hardy perennial plant, from the Andes of Chili; found growing at an elevation of from 6000 to 7000 feet above the level of the sea. It attains a height of from 4 to 8 inches, producing during the summer months a profusion of rich orange crimson flowers, and from its dwarf habit and brilliant color it will be found invaluable either as an edging to large beds or for the filling of small ones, as well as for the decoration of the Greenhouse.

Pinus densiflora, (Siebold).—This tree is found over the whole empire of Japan, where it is extensively planted for its timber. It will prove to be a distinct and ornamental species of the long leaved class of Pines, growing to a considerable height, and will undoubtedly be perfectly hardy.

Pinus Koraiensis, (Siebold).—This fine Pine, which is found growing in great abundance in the northern parts of Japan and Manchuria, is recommended as being perfectly hardy and able to withstand the severest of European winters. It is a long-leaved species with glaucous foliage, and will be a valuable edition to our hardy ornamental Pines. The cones are large and highly ornamental.

Retinospora lycopodioides?—This new species is another of our recently valuable introductions from Japan. It is of dwarf rigid habit, with fine dark green foliage and spreading branches, and forms a very distinct and interesting plant. It is perfectly hardy.

Retinospora obtusa, (Siebold).—This one of the finest of Japanese hardy Evergreen Conifers, forming a tree of large dimensions and beautiful aspect. It will doubtless prove to be highly useful as a tree in many respects.

Retinospora pisifera, (Siebold).—This spe-

cies forms a more slender tree than the preceding. It has sharp pointed leaves, glaucous on the under side, and is a very distinct and ornamental tree.

Sciadopitys verticillata (Siebold). *The Umbrella Pine of Japan.*—It attains a height of from 80 to 90 feet, and is of a perfectly pyramidal habit. The leaves are long, of a green color and are singularly arranged in whorls, from which peculiarity it derives its name of "The Umbrella Pine."

It has already proved itself perfectly hardy, having withstood, near London, the frosts of the past winter without the slightest injury.

Thuja pygmæa.—A perfectly hardy Japanese species, remarkable for its dwarf habit. Its dark green foliage forms a cushion-like tuft, giving it a distinct and novel appearance, and rendering it one of the prettiest of Dwarf Coniferæ.

Thuja (Biota) falcata.—A Japanese Arborvitæ, of the Thuja orientalis class, sent to England by Mr. John G. Veitch. It is a plant of very neat foliage, and exceedingly upright and pyramidal in its growth. This perfectly hardy variety is employed in large quantities by the Japanese for forming hedges, for which purpose its close compact habit renders it most suitable.

Domestic Intelligence.

Death of Horticulturists in the War.—Many well-known horticulturists are actively engaged, but, thus far, most have escaped injury. We are sorry to find among the recently announced deaths, that of General Keim, of Reading, Pa., whose Pomological tastes were of a high order; and Captain Ford, the well-known nurseryman. The former died of disease contracted at Yorktown, and the latter fell while gallantly heading a charge at the battle of Winchester.

Pennsylvania Horticultural Society.—In a report of the Brooklyn Horticultural Society's meeting Mr. Nichols moved a resolution, in the preamble of which we find the following: "Whereas," "in view of the failure of the New York Horticultural Society, and *latterly of the famous one at Philadelphia*," &c., which said *latterly* will be great news to those most concerned. The Philadelphia society is probably worth $15,000, and will probably long be "famous" yet. Some disappointed members, with the ear of some of the public prints, had, it is true, caused an impression that it was in its last death agonies, to get abroad; when, from causes well known to the members, it had only lost the prestige of fashion. Judicious management is fast recovering this lost ground, and though its exhibitions are not up to their ancient magnifience, it is as strong and useful as ever.

Budding Fruit Trees.—Whatever may be the *theory* of the process of union of the bud with the stock, it is certain that the more vigorous and healthy the growth of the stock is, the more certainly the buds unite. It is hardly worth spending time in budding unthrifty stocks, even if the bark seems to run freely.

Transplanting Cabbage and other Vegetable Plants.—Through past volumes of the *Gardener's Monthly*, we have recommended our readers, in transplanting, to set the plants with their roots in buckets of water,—taking them out and planting at once from the water into the soil. Plants so set out seldom wither or require any protection from the sun. The many instances we daily see where this precaution is neglected, induce us to repeat the hint.

To Preserve Posts.—Tarring or applying other matters to the ends is often the practice. The best and cheapest plan is to slightly char the ends. Every one has at times rubbish to burn, and the charring may be done at the same time.

Grape Cuttings.—At a recent meeting of the Northern Ohio Grape Grower's Society, all the members agreed that cuttings made during fall were worth much more than cuttings taken off in spring.

The Lawton Blackberry in Wisconsin.—Mr. O. S. Willey of Madison, says, this proves a failure in that section of the country.—*Wis. Farmer.*

Curculio.—Many parties assert they find much protection by tying loose cotton around the trunk of the tree over which the curculio will not pass. As the curculio flies, of course this will not prove a complete safeguard; but if it only is partially successful, by keeping down those who "travel on foot," it is so much gained.

Late Summer Planting.—Mr. Hanford says, in the Ohio, *Field Notes*,—"In this connection I send you an extract of a letter from one of the most distinguished and successful cultivators in this country:

'The last few years have completely revolutioni-

zed evergreen management in this old Dutch burgh of Germantown. More have now been planted in *August* and *September*, during the past three years, than all the rest of the months together, and I do not think the failures to grow are *one in a thousand.*' "

We can confirm this statement. The revolution in Germantown has been complete and most successful.

Native Wine.—Alluding to the proposed tax a contemporary says:—The growth of grapes for wine in California is already becoming important, and we are inclined to think the Pacific coast may in time rival France and Germany in the production of the juice of the grape. Already the Western coast wines take the precedence of all others of American growth, and with due encouragement we look to see the Pacific slopes become the 'land of the olive and vine.' There are large tracts of territory in Ohio and Missouri, peculiarly adapted to vineyards and apparently of little value for any other purpose, to which wine-growers have been directing their attention with cheering prospects, and it would be unfortunate if any thing should occur to discourage this new department of horticulture at this early stage of its development.

Climate of Southern Illinois.—The ground does not freeze half as deep as in Massachusetts, and of course the mud is not very deep, not as in Northern Illinois. The original settlers of Egypt are nearly all of Southern origin, mostly from Tennessee and theCarolinas. The modern settlers appear to be the most progressive people. On the completion of the Illinois Central Railroad, eight years ago, Eastern men began to flock in, and now about one-third of the population, in the vicinity of the railroad, are from New York, Ohio and New England, comprising teachers, professional men, mechanics, farmers and pomologists, many of whom would rank high in their respective callings in the Eastern States.

Foreign Intelligence.

Death of M. Vilmorin, Sr.—By recent advices from Paris, we lean of the death of this distinguished horticulturist, on the 21st of March, in the 86 year of his age. He was the founder of the well-known firm of Vilmorin, Andrieux & Co., one of whom, M. Louis Vilmorin, a youg man of great scientific promise, died last year, as already recorded in the *Gardener's Monthly.* We belive the business will be continued under the old name, by Madame Louis Vilmorin and her sons.

Sequoia gigantea;—Mr. Gordon, in his recent work, "Supplement to the Pinetum," has the following extract. As the German, French, Belgian, American, and we believe the garden literature of all countries, *except* the English, use the name Sequoia for the mammoth tree of California, the idea of the extent of the *universe* in which garden literature exists, must be very limited in Mr. Gordon's estimation. Liitle complimentary as the last sentence is to certain European Botanists, Mr. Gordon himself can not lay much claim to liberal views:

"The Genus Wellingtonia is considered by most systematic botanists as untenable, it not being sufficiently distinct from Professor Endlicher's Genus Sequoia; nevertheless as the name has now been universally adopted in garden literature, it had much better be allowed to stand, as its alteration would cause great inconvenience and much confusion in practical botany. *It, however, is much to be regretted, that any sinister motives should ever interfere with botanical science, so as to drive botany from its high position, to occupy the low footstool of flattery.*

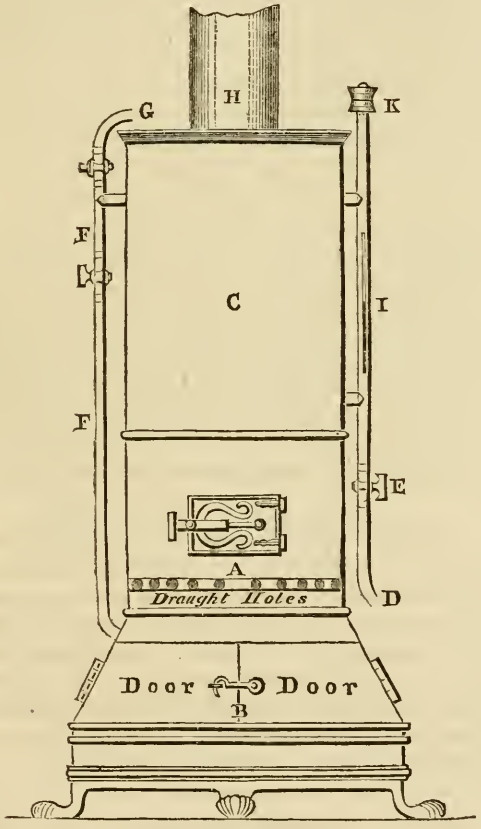
A Hint to Ladies.—Of what use is crinoline to married people if the drawing-room is not full of blooming flowers from September to Mayday, besides a change of dinner decoration-flowers two or three times a week? Botany, bedding-plants, florists or pomologists, when compared with the mistress of such a glorious art, are of no more account than though they were but just emerging from the Noachian deluge.—*London Cottage Gardener.*

Mr. J. G. Vietch, one of the most recent as well as one of the most successful collectors in Japan, has just returned to England after a two years trip, having already sent home many novelties, some of which have already been reported in our pages.

New Vapor-fed Stove and Grate.—"The very great advantages of this invention, in its several applications, depend mainly on two principles, the former of which was partially known previously to the time when (November, 1857) they were both accidentally discovered by the inventor. The first is, that steam at a certain temperature will, in con-

tact with ignited wood, coal or coke, decompose and burn; the second, that whatever amount of steam a given fire will generate, any portion of that steam, or the whole of it, may be passed into and through that same fire with increase of heat and saving of fuel. The inventor has passed half a gallon of water per minute through the furnace, which evaporated it, with the expenditure of only 2 cwt. of gas coke, in 24 hours.

FIG. 1.

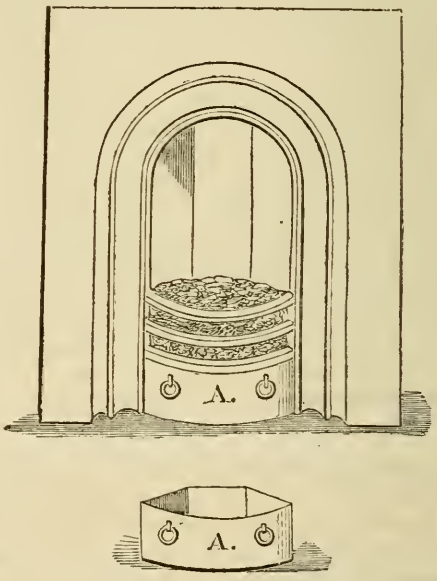


ELEVATION.—Scale $\frac{3}{4}$-inch to 1 foot.

The stove (Fig. 1) may be either cylindrical or oblong. It consists of a furnace, A, with an ash-pit and steam chamber, B, beneath, and a boiler, C, either annular or tubular, above it. The water is supplied to the boiler at the lower part of it by a pipe, D, connected with a self-supplying cistern, and furnished with a cock, E. Another pipe, F, G, conveys by its lower branch F, any portion or the whole of the steam into the chamber, B, beneath the furnace, and so into the furnace, and by its upper branch, G, it conveys what portion may be required into a vessel or chamber, which may be connected with the stove for the purpose either of cooking or drying. The smoke and any steam which may escape may be conveyed by the flue, H, into a chamber or flue round an oven, before it enters the chimney. The stove is also furnished with an index-glass, I, and a safety-valve, K.

"Through the last winter, one of these, only 3 feet in height and 11 inches in diameter, was sufficient to warm a schoolroom 52 feet by 29 feet, and

FIG. 2.



18 feet in height, with less than 14 pounds of gas coke for eight hours. The schoolmaster steamed his dinner by it, and occasionally steam was let off with great advantage for the freshening of the air.

"Careful experiments have given the following results. If no steam were passed through the fire, the evaporation was 5 quarts an hour, with the consumption of 5 pounds of gas coke. When all the steam generated was passed through, the evaporation was 8 quarts in the same time with consumption of only 4 pounds of coke.

"With 28 pounds of coke for 14 hours, this same stove has warmed the same room, during 13 hours of which time a portion of the steam was used for cooking, and during 12 hours an oven was kept at a temperature of 240°. The oven might be placed on side of the stove, and the steaming apparatus on the other, and a hot plate be formed by the top of the stove and the connecting flues. The stoves as

here figured would be admirably adapted to waiting rooms at railway stations, and to entrances and passages in large hotels. If used for steaming food for cattle, it would save at least 75 per cent. on the ordinary mode.

"The invention, as applied to a grate (Fig. 2.), whether for parlor, kitchen, or cottage, or to kitchen ranges, or to furnaces, consist of an iron water-tight drawer, A, fitted so closely beneath the fire as that the water poured into it may have the fullest advantage of both radiation and conduction of heat from the fire for raising the steam, and so as to exclude all draughts of atmospheric air except such as, by a door or valve, it may in some cases be wished to admit. By this means, also, any offensive smells which might arise when foul greasy water may be used, are prevented from escaping.

"When rightly applied and used, this drawer saves full 50 per cent of fuel. It renders the fire brighter; greater heat is emitted; no dust escapes into the room; and it has hitherto proved a perfect cure for a smoky chimney.

"N.B.—Foul water burns better than fresh; and the best for the purpose is the dish-water from the back kitchen. In all other cases the application of the invention is exactly similar to this (Fig. 2), but the drawer not necessarily resting on the ground. It may, of course, be made more ornamental."—*National Health and Wealth, &c. By Rev. H. Moule.*

Foreign Correspondence.

NOTES UPON THE HORTICULTURE OF SCOTLAND IN THE YEAR 1861.

NO. IV.

BY E.

it is considered safest in these *warlike* times to *reconnoitre the masked batteries around a city before assaulting it*, we may survey the rural districts around the Metropolis of Scotland, before *laying seige to it.* I may relate an incident connected with rural embellishments, and with which I was familiar in my schoolboy days, as it shows the results following small beginnings and individual enterprise. A gentlemen owned a row of twenty-three houses, one story high, in a village along side his domain, which stood back twenty feet off the highway, with long gardens behind; the tenants had their pig-pens and manure heaps in front. The Madam distributed religious tracts monthly among the tenants, and looked upon these appendages as eye-sores, and proposed to remove them to the far end of the back gardens, and she would bear the expense. All agreed; so she hired four of the tenants, two carpenters and two laborers. New pens were pu t u and manure pits dug four feet deep alongside of them, and stoned up on the sides; a tile drain was made from each pit to the back door of the house to which it belonged, and a box with a sheet of tin full of holes fastened in it, was set at the end of each drain to pour the waste waters into, to be carried to the pits by the drain. A half acre of a lot adjoining the gardens was fenced in, and posts put up as a bleaching green and to dry clothes for all the tenants. The front was cleaned, and beds made eight feet wide close to the houses and planted with flowers, and a gravel walk made along the front. The *Laird* who owned a row of the same length across the road admired the change, and improved his in like manner. All the lady's visitors were shown the improvements, and they improved their properties in different parts. The tenants, however, for whose benefit the improvements were made, were smitten with fear, lest their rents, forty-five shillings a.year, would be raised to fifty shillings to pay for such finery; but, when the term-day came, each got back five shillings of his rent for so willingly complying with the Madam's wishes,—and all were told that those who kept their houses and gardens tidy through the year, would get back a crown of their rent money every term day. Like improvements went gradually on. Master tradesmen and others became Feuers, and built for themselves. At length the landed gentlemen of wealth took up the matter; old houses were torn down, and new ones, of superior designs, material, workmanship, comfort and convenience were erected in their stead, and set back from the wayside, to make flower-beds in front. And instead of continued rows, they are in pairs, with wide openings between, to make broader gardens and save the making of back doors. The floors are a foot higher than the ground, filled in with refuse stone and mortar, and a mixture of gravel and lime, and paved with flag-stones. A tile drain is under the floors, and goes through the end walls, to carry off ground damp; water is introduced, and waste water carried off where practicable. The smallest house has two rooms, called a *Butt and a Benn*; the beds, pantries, cupboards, dressers, fire-grates are all fixtures; as great improvements have been made upon houses for head gardeners and married men upon farms, and *Bothies* for journeymen gardeners. It is now under consideration with the wealthy, to wholly furnish the houses for gardeners and ploughmen, so that when they move they will only have their wearing apparel to carry with them. But the workingmen object to

it, upon the grounds that when they get out of place they will be out of home.

Go where you will now, every house you come to is decorated with flowers; the whole country is illuminated with them; the people are more intelligent and happy, more saving and industrious, and profligacyis unknown except among theives and ruffians, in the low haunts of large cities. Any one who has been twenty years out of Scotland, and goes back now, will be delighted as well as surprised at the new order of things; and would say as I say, where I thought they were finished they had only begun.

Improvements of a far grander scale have been made upon private estates; but as it would take volumes to describe them, to be brief and save repetitions, I will only give some general remarks, and notice striking objects upon a few places:—

Glass structures for the culture of choice blooming plants, grapes, peaches and nectarines, are every where, and increasing in numbers. Orchard-houses are plenty and others going up; the regularity, exactness, precision and tastefulness of the arrangements, with the universal success of all undertakings are admirable, but not wonderful, as a sufficient number of practical hands are kept to do the work without bustle or confusion. The almost non-interference of employers, too, fosters the natural growth of ingenuity, energy, carefulness and industry in the head gardeners; they feel a responsibility upon them, and the desire to please and excel in their professions become paramount in their thoughts. Untroubled minds deliberate and plan with caution, and execute with alacrity and precision, and success crown their efforts. No job is done twice,—no tree is first planted and lifted to look better in another place; that was all considered in advance, and every thing done right at first,—and, by that, the saving of money is often one-half the cost. Shillings' worth of time are not spent upon pennies' worth of seeds. No seeds are saved. Whenever a crop in the vegetable garden gets past its prime for the kitchen, it is removed and another put in its stead. The garden is always green, and the soil unreduced; and the nipping off of the fading bloom in the flower-garden, keeps them in constant freshness and bloom.

Upon Wachope's Park, at Niddry, there is a Holly hedge, thirty-five feet high, twelve broad at the base and tapering to nothing at the top; clipped twice a year and so thick that a sparrow cannot get in to build its nest. There is a span-roofed greenhouse in course of construction, to be heated with hot-water pipes, upon a new principle,—which the head gardener, Mr. James Gordon, thinks will surpass all that has yet been invented.

At Dalkeith Palace, Duke of Buccleugh's, all branches of gardening are upon a gigantic scale. The *natural order* is prevalent throughout, and never was the place better managed than now, under its present skillful and very courteous head, Mr. Thompson; the grapes sent from there to the World's Fair, at Paris, last September, carried off the first prize.

Upon the Middleton Castle grounds, upon the Kelso road, is a small lake, grouped around with clumps of evergreen shrubbery, among which the Rhododendron maximum and Kalmia latifolia are conspicuous; they thrive and bloom profusely there in the open lawn; and although evergreens generally suffered severely by the intense cold of last winter, the Rhododendron and Kalmia did not lose a leaf. Three miles north of this is Harveston, with a broad creek running through it; dammed at three places, making pretty waterfalls, and serve as fish ponds in summer and curling ponds in winter (almost every estate now has a curling pond and a quoit ground); the banks are smoothed and sodded, and two feet off the edge is a gravel walk eight feet broad and lined on the outside with evergreen shrubbery.

Melville Castle, of Lord Melville, near Lasswade, for lofty site, highly embellished grounds, and fine views is unsurpassed.

At Dalhousie Castle, of Earl of Dalhousie, there is the best library (it is said) in all Scotland, for the free use of the Bothie (garden) lads; besides reading books there are numerous folio volumes with colored plates, with leaves and blooms full size.

At Gogar House, five miles west of Edinburgh, the avenue is a mile long, and shaded with a belt of tall trees upon each side. The Gogar Pippin apple originated there; the old tree has been dead thirty years, but its offspring are still numerously cultivated and thrive, and fruit as abundantly as ever.

At Dalmany Park, of Lord Dalmany, the training of fruit trees upon the garden walls, it is said, is the best in the kingdom. I cannot see how it can be surpassed. The walls are sixteen feet high, with trees upon both sides, and are heated by smoke flues inside; there is a water run in the bottom six inches above the ground, with an opening at every tree, and by raising a slide the water runs out and spreads all over the roots. The water is led from a fountain upon a hill, a half mile off, and supplies the mansion, stables, glass structures, and gardens. I was there thirty years ago, when two bunches of Black Hamburgh grapes were cut, and weighed together twenty-one pounds and an ounce.

Barrington, of the late William Ramsay, Esq., is

one of the most extensive and beautiful parks in Scotland. The family is immensely rich, though not titled. The present occupant is a *Lady*, being daughter to Lord Torphichen, of Mid-Calder. The gardeners are confined to the gardens, and a *Factor* manages the affairs of the park. Ripe grapes used to be cut ten months in the year. There being plenty of stable manure, it was made into large heaps, and heated to scalding heat, and put upon the borders of the vineries in winter two feet thick and covered with boards and mats to keep it hot, so as to heat the soil below and excite the grape roots into quick growth. Journeymen were only allowed one year there, and many of the best gardeners both in America and Europe have served a twelvemonth there. The park has been extensively drained; the drains were eight feet deep, five feet wide at the bottom, and walled up with stones four feet and covered with flagstones, so as not to be in the way of sunk fences. The park is divided into lots by sunk fences, and now some wire fences, and sold yearly at auction to butchers to graze cattle and sheep, and bring in vast sums of money. The cattle are kept farthest off the mansion and sheep nearest to it; they look beautiful moving among the long grass and trees, and the lowing of the cattle and bleating of the sheep, are musical in the distance. Some of the Horse Chesnut trees cover forty yards in diameter with their branches.

Beechwood, of late Sir David Dundas, upon the south slope of Costerphine Hill, is one of the prettiest spots in Scotland. It is noted for its many Beech trees of great size and form. There is an Irish Yew hedge twenty feet high, ten feet broad, with sofas and arm chairs cut in it, and all so compact that the surface only can be seen.

Adjoining Beechwood upon the east side, is Belmount, of Lord Mackenzie. The mansion is said to be the most chaste and beautiful specimen of Architecture and good workmanship in Scotland. It took six years to build it. The stone is light sandstone polished. From here to the city of Edinburgh, two miles long and half a mile wide, is covered with villas with one and two acres each, stocked with fruit trees, flower-beds, glass houses, etc.

Next to the city is the notable Donaldson College, of light sandstone polished; larger than the Continental Hotel, Philadelphia, with many spires and towers arising above its roof, and much fine carved work about it. The grounds are twice the extent of our Girard College, and laid out and embellished with all the beauty that ingenuity and skill can make it. The whole may well be laid on as a crowning sheaf to architectural and horticultural magnificence, combined in a charitable literary institution.

NOTE.—On page 156, second column, line 2, it reads South *Inch* and North *Inch*; it should be South *Inch* and North *Inch*: the meadows are called Inches, so Perth lies between two Inches.

Horticultural Notices.

PENNSYLVANIA HORTICULTURAL SOCIETY.

DISCUSSIONAL MEETING, MAY 6.

D. R. King, Esq., in the chair.

SURFACE CULTURE AND MULCHING.

Mr. Walter Elder presented an essay on the subject. He argued, that where soils were deeply tilled, drought had little effect on the vegetation growing in them. He would keep loamy soils well hoed and raked during the summer, and considered this practice superior to any system of mulching with litter.

Prof. J. J. Mapes, at the request, of the meeting, addressed them upon the topic under discussion. He premised by stating, that if the subject were intended to be treated as a discussion on well prepared soil, he would state his experience. He had found, in his own practice, that the new horse tools used by gardeners should be adopted by farmers, if they would attain the highest results. The sub-soil lifter he considered indispensable to good culture. When a mole burrows under ground he leaves the soil much looser than can be done by the plough, which compacts the bottom and side of the furrow in proportion to the depth and width of the slice, and the propulsive force required. The mole lifts only three quarters of an inch deep, but leaves the soil thoroughly pulverized. The sub-soil plow imitates this action on a large scale; it penetrates much deeper, but does not *invert* the soil, it only *lifts* it, and it falls back again, the relative position of the particles being changed. In surface culture it is only necessary to change the relation of the atoms of soil, so as to present fresh surfaces to the action of the roots of plants; the millionth part of an inch is as good as more, provided the disturbance be thorough and uniform. In cultivating growing crops with this plow, we lift plant and soil together. The lifting is not vertical but in the form of a V. A plow four inches wide, plowing at a depth of ten inches will disturb the surface to a width of fourteen inches.

When corn is three inches high, we run a sub-soil lifter between the rows and every plant is gently lifted, without injury to the roots. It looks as

if a huge serpent were burrowing in the ground. This operation, is more effectual and loosens the soil better than twenty hoeings. Then follow, as the weeds begin to grow, with Howe's or Knox's horse hoe, which leave the weeds on the surface to wilt, and keeps the ground clean and mellow, the first time four inches the second time one inch deep. I never use hand tools nor hill the corn. When hilled, the production of side roots is encouraged; but in flat cultivation the tap root goes deeper and takes stronger hold on the soil. The corn will not be easily blown down by high winds under flat culture as when hilled. Carrots we treat in the same manner, loosening and but slightly disturbing the soil. The seed is buried in the ground in a bag until soft, and then sowed with one-tenth part of scarlet radish seed well mixed. The carrot is slow to germinate, but the radish comes up quickly and marks out the rows before the weeds get too high; its leaves also shade the young carrot from the sun's rays. Just before the radishes are full grown, the small one-horse sub-soil plow is run between the rows, and the radishes are easily removed from the loosened soil without injury to the carrots. This is followed in a few days by the carrot weeder, and if properly done, little or no hand weeding is necessary. We readily obtain one thousand bushels per acre by this system of cultivation.

I formerly employed twenty men to cultivate thirty acres, with hand tools; I now have one hundred acres better done by four men and three boys, with the improved horse tools.

As an illustration of the effect of a change of surface of the particles of soil, observe a pile of cannon balls, exposed to the air. The rain washes off all the rust from the iron except at the points of contact of the balls; here there is always oxide of iron. Turn these balls and the rust will disappear, but form again at the new points of contact. So with the soil, its particles should constantly present fresh surface to the action of the air, moisture and the roots of plants.

The first half-pint of water falling on any given surface, is worth more than five gallons afterwards, as it takes up all the fertilizing gases of the atmosphere. The rains and dews thus *wash* the air. The surface of the soil should be put in such condition, by thorough culture, as to retain and absorb all these elements.

Mulching was first practised in England under the name of Gurneyism. Cover a plot of grass in the fall with a board, stones, shavings or what not, and uncover it in spring; you will have tall grass there next summer. The long manure applied by farmers in autumn, acts in the same way. If the soil, from any cause, is $1\frac{3}{4}°$ cooler than the air in summer, the atmospheric moisture will condense upon it. Mulched soil is always thus cooler than the air above it, and a condensation of the fertilizing elements of the air is constantly going on; these elements exhale from the soil by day, and are recondensed at night. Salt hay applied to a field in autumn and removed in spring, is as good as half a coating of manure.

Prof. M. here explained his method of training the mule for close cultivation between narrow rows of crops. Prefers the mule to the horse, as more easily taught, though sooner forgetting his lesson. One hundred acres can be kept clean and free from weeds by one well-trained mule and boy.

As to the mulching of fruit trees, there has been much speculation indulged in. I practise it upon pear trees successfully, leaving one occasionally unmulched to see its effect. The water passing into a tree should be as cool as the tree itself; mulching secures a cool soil and cool drink for the tree. There is no danger of summer blight of the pear tree if no putrescent manures are used, and the soil be properly mulched. The covering should be removed in the fall, to prevent an excess of water passing into the tree, and a late succulent growth.

Would not undertake to farm without the subsoil lifter. Plow as deep as the loam is, and follow in the furrow with the subsoil lifter, the beam running on the bed of the furrow: in this way he now disturbs the soil more than two feet deep. There cannot be any drought in well subsoiled land, well underdrained. There is, always, in the severest drought, a great deal of moisture in the air, and such a soil will condense from the air passing into it enough moisture to supply the wants of plants. *Every* kind of soil needs subsoiling. Subsoiled meadows will never run out. It is not requisite to plow the sod under every few years, but run a sub-soil cutter through every three feet and cut off the roots, leaving the sod in the same position as before, and then top dress with some slowly soluble manure.

Grasses are, like wheat, tillering plants; in an unworked subsoil they cannot long continue to tiller and gather fresh food, but must be fed from the surface.

Has leased grass lands, cultivated them eight years in this way, getting $2\frac{1}{2}$ to 3 tons per acre, and returned them to the owner in an improved condition. However shallow planted a crop may be, it will do better if first well subsoiled.

In reply to a question concerning grass sod as a

mulch for fruit trees, Prof. M. stated, that an orchard in grass requires to be well fed. If near a large town, the fruit would be the great object, and the grass might be cut and left on the ground, or shaved weekly with a lawn mower. At a distance from a large market, it might be better to grow both grass and fruit, and this can be done if you *feed* well. A crop of pears is worth twenty grass crops, near a good market. Considers unleached wood ashes the best manure for pear trees. Use no animal or putrescent manures either for grass or trees. About 15 per cent of the dry weight of the apple tree is lime. In twenty years an apple orchard would exhaust all the *soluble* lime in the soil.

Uses one gill of super-phosphate and two gills of wood ashes, always applied on the surface, for each pear tree, and finds this sufficient to keep them in perfect health. Has five thousand pear trees, and not one of them is sickly. Lime soon makes its way down to the subsoil. Instead of fifty bushels once in several years, apply two or three per annum on the surface. Over-limed lands can be restored by dressing with salt, and vice versa. Salt destrys insects, and heavily applied kills weeds and ruins the growing crop, but renders the land the next year exceedingly productive.

If a soil be well drained and subsoiled, there is no necessity for the application of organic manures;—there is no ammonia wanted, the atmosphere supplies it in abundance. On shallow plowed soils organic matter is required.

Mr. King had seen charcoal used as a mulch two or three years since at Mr. Saunders' place, and desired to know the benefit resulting from it.

Mr. Saunders—It retains the moisture in summer and keeps out frost in winter.

Mr. Harrison had used charcoal in forwarding early peas, blanching celery, and mulching pear trees, and with the best success.

Mr. Hayes—Does Prof. Mapes use the subsoil lifter for small fruits?

Prof. Mapes—I use it in preparing the soil and cultivating between the rows of strawberries the first year, but not afterwards.

Mr. Ritchie has always found that Onions succeed best on a firm soil.

Prof. Mapes had the same experience, but advised thorough subsoiling first.

Mr. Harrison suggested the importance of mulching raspberries, blackberries, and the like.

Prof. Mapes—All the brambles are benefitted by mulching; they are also very gross feeders, and need plenty of nourishment. Had mulched part of a vineyard last year, in which rows of blackberries alternated with the vines, and perceived a marked difference in favor of the mulched portion.

Mr. Hayes has obtained the best results by mulching with common hay salted. Would do wherever practicable.

Mr. Saunders thought the question for the evening had not been properly stated. It was a question of surface-culture *and* mulching combined. Mr. Chas. Downing's orchard was kept continually mulched and was in excellent health.

Mr. Eadie supposed the question to be a contrast between surface-culture *with* mulching, and deep culture without mulching,

Prof. Mapes—Applies all inorganic manures on the surface. Putrescent manures thus applied evaporate most of their organic matter. Long stable manure applied to grass is valuable mainly as a mulch. In adhesive clay soils it should be plowed in, so as to loosen the soil mechanically. Clay soils are not only retentive of moisture, but the alumina absorbs all the fluids resulting from the decomposition of organized bodies.

Mr. King inquired as to the effect of mulching gooseberries.

Mr. Harrison related his experience in this matter. He raised fine English gooseberries free from mildew, by the use of salt hay mulching.

Mr. Ritchie attributed the mildew on gooseberries to sudden atmospheric changes.

Mr. Saunders was not disposed to take this view. It is a popular habit to charge all mildew to sudden changes of weather. In his view it was caused solely by aridity.

On motion the thanks of the society were presented to Prof. Mapes for his interesting and instructive remarks.

Dr. Louis Jack, of Germantown, was appointed to deliver the opening essay on the Culture of Window Plants, on Tuesday evening, June 3d.

MONTHLY DISPLAY, MAY 13.

The monthly exhibition was held at the Society's Hall, at Broad and Walnut Sts., and was thronged, as a London reporter would say, with "the wealth, beauty and fashion of the metropolis." The Chinese Museum, in its palmiest days of floral exhibitions, never was more densely packed with visitors or had a choicer set of objects on exhibition, than were brought together on this occasion. The continued progress of the society in public estimation and usefulness, must be very gratifying to the ladies and gentlemen actively engaged in the good work. The following is the award of the *first* premiums,—we omit the seconds, thirds, and so on:

Ornamental foliage plants. Best ten in 8 inch

pots, Mr. Chas. H. Miller, gardener to D. Rodney King, Esq.: Caladium Belleymei, C. Chantinii, C. Neumannii, C. Brognartii, Pandanus Javanicus variegatus, Begonia Madame Alwardt, Dracœna terminalis, D. marginata, D. ferrœ, Billbergia rosea.

In the second best collection (Mr. Eadie's gardener to Dr. Jas. Rush) the Pteris argyrea, and Hoya variegata, were very much admired.

Verbenas. Best twelve in 4 inch pots, Mr. Thos. Meehan. The committee reported that Mr. H. A. Dreer's were the best, but were disqualified through being in 5 inch pots, contrary to schedule. The list of the Verbenas was not handed in to the Secretary. Mr. Meehan's were Louisa, Princess Clotilda, John Bright, Oberon, Carnation, Brilliante de Vaise, Valeda, Ariosto, Mad. Lemorier, Swan, Lafayette, Mrs. Woodruff.

Twelve plants, not over 10 inch pots, best to Mr. Eadie, gardener to Dr. Rush: Azalea floribunda, A coronata, A. Iveryana, A. Parryana. A. Extranii, A. Eulalie Van Geert, A. formosa, Polygala oppositifolia, Mahernia odorata, Rhyncospermum jasminoides, Caladium marmorata, C. bicolor.

The second best collection, by Mr. E. Hibbert, gardener to Fairman Rogers, Esq., had many beautiful plants, amongst which the Tetratheca verticellata was very attractive.

Petunias. Six plants, in 5 inch pots, best to Mr. Thomas Meehan. They were Bicolor, Mr. Baker, Hafed, Zouave, Inimitable, Don Juan.

Hanging Basket, with plants. Best to Mr. Jas. Eadie, gardener to Dr. Rush.

Indigenous plants, named, best collection, (36 species) Mr. Joseph Meehan.

Pelargoniums.—Best twelve in 8 inch pots, Mr. E. Hibbert, gardener to Fairman Rogers, Esq. Jenny Lind, Monarch, Bicolor, Mrs. Coleman, Virginie Miellez, Diadematum carminiatum, Spot, Lagona, Emperor, Quercifolium eximium, Fancy, Pandora.

Hardy Flowering Shrubs. Six cut specimens, best, Mr. Thomas Meehan: Ribes aureum (yellow), Corchorus japonica (yellow), Magnolia purpurea (purple), Spiræa prunifolia (white), Double Almond (pink), Pyrus japonica (scarlet).

The best Table Design, best Hand Bouquet, and best Basket of Cut Flowers, were all awarded to Mr. Eadie, gardener to Dr. James Rush.

A premium was offered for Tulips, but none were exhibited. "Tulipomania" seems abating.

Pine-apples were not exhibited, as expected, though their growth by amateurs is extending. No grapes either were in competition for the offered premium.

Asparagus. Best 24 stalks, Mr. J. Jones, gardener to Girard College.

So many worthy articles were exhibited, not provided for in the Schedule, that the committee felt justified in recommending the following special premiums: For four Collections of Ornamental-leaved plants, from the following gentlemen, Fairman Rogers, Esq., Mr. John Pollock, gardener to Jas. Dundas, Esq., Dr. Rush and No. 8, equal to the first premium awarded. To Fairman Rogers, Esq., for Calceolarias. To Adam Graham, gardener to Genl. Patterson, Hanging Basket of cut flowers. Mr. W. Smith, gardener to Hugh Daniels, Esq., combined Table design, aquarium and fountain. Mr. H. A. Dreer, two Vases of Flowers.

The committee reported that they were "pleased to see two shrubs exhibited before the society for the first time, that have the appearance of being ornaments to the lawn or shrubbery—Fothergilla tomentosa, and Spiræa Blumeana, from the nursery of Mr. Meehan." The former appeared to be closely allied to F. alnifolia, white-flowered and sweet-scented; the latter blooms as early as S. prunifolia, but is accompanied by foliage, which the latter has not till the flowers fade. They also reported "a yellow Verbena, 'Welcome,' from P. Mackenzie & Son, which they have no reason to think will not be a fine contrast to other verbenas in summer, when few other yellow flowers are in bloom."

The rooms were beautifully adorned with plates of fruits and flowers, presented to the society by M. Vilmorin & Co., of Paris, through Mr. H. A. Dreer, of Philadelphia.

Roses, Fuchsias, Strawberries, Cherries, etc., will no doubt present their usual June attractions, the second Tuesday in the month. Raspberries in July; Peaches, one peck, Nectarines, 12, Blackberries, one quart, Gooseberries, collection, Gladiolus, six cut specimens, and best cut collection named Phlox, in August,—open to all, should bring out the competition from abroad, which the Philadelphians invite.

STATED MEETING, MAY 20.

The Finance Committee had not yet examined the Treasurer's account and asked to be continued till next meeting.

A communication was received from Mr. A. Barrows, Chairman of the Union Volunteer Refreshment Saloon, asking the aid of the members of the Society in a Strawberry Festival and Floral Fair, to be held at their saloon, June 16th, to which it is hoped they will actively respond. Mr. Schaffer ap-

pealed to the members present to aid in this noble charity.

Mr. Saunders was appointed Superintendent of Exhibitions, to arrange articles placed on exhibition at each meeting.

Several gentlemen were nominated for the office of Treasurer, when it was resolved to postpone the election till the next meeting.

The following members were elected:—Messrs. Geo. Burnham, A. S. Jenks, R. C. McMurtrie, Edward H. Trotter, Wm. Henry Trotter, Daniel B. Cummins.

The Discussional meeting on "The Culture of Window Plants," will be held on Tuesday evening, June 3d. The Horticultural Display, June 10th. The Stated business meeting, June 17th, and a Social meeting, June 24th.

CHESTER CO. (PA.) HORT. SOCIETY.

The following is a list of the Officers for the present year:

President—John Rutter, Esq.,

Vice-Presidents—Pierce Hoopes, R. B. Taylor.

Corresponding and Recording Secretary—A. Marshall.

Treasurer—John Marshall.

BROOKLYN HORTICULTURAL SOCIETY.

The reports of this society do not reach us in regular order. One of the 25th of February, now before us, has some interesting matter respecting the Carnation by Mr. Zeller. He approved of repeated renewals by layers and cuttings,—thought cuttings made the best plants; propagated from February to May. Layering however did best in June.

Mr. Mead had found good fresh soil from a pasture the best for Carnations. Liquid manure he thought good for them, when the flowers did not open well.

On the question of trees running out when budded, Mr. Mead thought seedlings had no advantage in this respect.

The most attractive plants at this meeting were the Carnations of Daille douze & Zeller, one of which, Souvenir of Brooklyn, was particularly admired.

The Spring exhibition was held on the 23d, 24th and 25th of April, at the Academy of Music, Brooklyn. It was the largest and best display ever made by the society,—all the contributions being choice and worthy of exhibition in any part of the world.

The largest and most prominent contributors among the commercial gardeners, were Messrs. I. Buchanan & Son, of New York, and L. Menand, of Albany, N. Y.; from private collections of H. M. Bearnes, Esq., of Williamsburgh, L. I., Jas. Hoyt, Esq., of Astoria, W. C. Langley, Esq., of Bay Ridge, R. L. Stuart, Esq., of New York, there were some magnificent specimens.

The collection of Orchids, exhibited by Messrs. Buchanan & Son, were very choice, and were awarded a special premium, which they richly deserved.

Mr. Menand's plants were as usual of the most beautiful and rare kinds, and exhibited the care and attention they received.

H. M. Bearnes, Esq., sent some of the finest specimens ever exhibited before the society,—a "Cyanophyllum magnificum," 8 feet high, with its gorgeous foliage was the greatest attraction; all the plants from his place was in the most perfect health and vigor. He is now building a Victoria house, in which to flower the Queen of Flowers, and is introducing many new and novel improvements of his own designing.

Jas. Hoyt, Esq., of Astoria, sent a splendid collection of Greenhouse plants, many of which are very rare.

W. C. Langley, Esq., of Bay Ridge, sent some very large and fine specimens of Azaleas, Rhyncospermums jasminoides, Pelargoniums, &c.

R. L. Stuart, Esq., of New York, a genuine Mocha Coffee Tree in full bearing, some ripening.

A. C. Chamberlain, of Brooklyn, (late of Newport, R. I.), exhibited several of his Patent Basket, in which were Peach trees with the fruit nearly ripe; Grapes with the bunches fully formed as strong and vigorous as any grown in graperies, with all the care and attention that could be bestowed upon them. There were also Azaleas, Roses, Fuchsias, variegated-leaf plants, ferns, mosses, etc., all looking better than any grown in pots in the ordinary ways.

The society awarded Mr. Chamberlain a special premium for his new and novel method of growing all kinds of plants, fruits and flowers.

A. G. Burgess, of East New York, exhibited two enormous plants of the *Daphne Cneorum*, in full flower, showing that the winter had not injured a leaf of them, while so many other evergreens have been seriously damaged. A special premium.

John Cadness, of Flushing, L. I., exhibited a new Seedling Petunia, called "General McClellan," which will no doubt become as popular with the people as its worthy namesake now is; it is a large full, double flower, of a deep rose color, mottled with pure white, very distinct and clear, the plant

is of a strong, robust growth and free flowerer. A special premium.

There were many others worthy of particular notice, but all were so good that the above must suffice. The receipts were far beyond the usual amount, and the society will hold another exhibition in June, and their large Fall exhibition will be given in September, for which they have secured the whole building of the Academy of Music, and contemplate making it the largest and best one ever given in this country. Due notice of the time will be given through this magazine for exhibitors.

We give the list of those who obtained first premiums, though it would serve the interests of the public better to have the name of the winning flowers, fruits and vegetables, as well as the names of the successful exhibitors, and we are sorry we have not got them with our report:

For the best collection of plants, David Fowlis, gardener to E. Hoyt, Esq., Astoria, L. I.

Best Ferns and Lycopodium, Louis Menand, Albany, N. Y.

Best Cacti, Wm. Grant, gardener to Wm. Vandeventer, Esq., Astoria, L. I.

Best Verbenas, Wm. Poynter, Florist, Brooklyn.

Best stove or greenhouse plants, L. Menand.

Best three stove or greenhouse plants, L. Menand

Best specimen stove or greenhouse plants, Geo. Hamlyn, gardener to Wm. C. Langley, Esq., Bay Ridge, L. I.

Best six variegated or ornamental leaf plants, Gustavus Messeberg.

Best specimen variegated or ornamental leaf plant, Louis Menand.

Best two Orchids, I. Buchanan Florists, Astoria.

Best specimen Orchids, Isaac Buchanan.

Best six Azaleas, Thos. Templeton, gardener to the "Large Estate," Brooklyn.

Best three Azaleas, Louis Menand.

Best Four Ericas, Louis Menand.

Best two Ericas, David Fowlis.

Best specimen Ericas, George Hamlyn.

Best six Pelargoniums, George Hamlyn.

Best eight varieties of Roses, W. Poynter, Florist, Brooklyn.

Best six varieties of Roses, W. Poynter.

Best three Fuchsias, Gustavus Messeberg.

Best four Gloxinias, Henry Tanner, gardener to J. S. T. Stranahan, Esq., Brooklyn.

Best colored Stockgilly, J. W. Wood, Washington Heights, N. Y.

Best specimen annual flower, G. Messeberg.

Best four Monthly Carnations, Dailledouze & Zeller, Florists, Brooklyn.

Best twelve Pansies, Mrs. John Humphries, Florist, Brooklyn.

Best collection cut flowers, G. Messeberg.

Best twelve cut Roses, Wm. Poynter.

Best parlor or table bouquet, Jas. Weir, jr., Bay Ridge, L. I.

Best pair hand bouquets, Thos. Templeton.

Best dish Strawberries, Henry Tanner.

Best six heads Lettuce, Thos. Prosser, jr., Bedford, L. I.

Best six stalks of Rhubarb, Thos. Prosser, jr.

Best twenty-five Radishes, same.

Best and most correct Labelling of Plants, Louis Menand.

SPECIAL AWARDS.

To Isaac Buchanan, for fine collection of Orchids.

Henry Tanner, for a dish of String Beans.

Isaac Buchanan, for a new Seedling Petunia.

John Cadness, Florist, Flushing, for a new Seedling Double Petunia, "General McClellan," very large and beautiful.

A. G. Burgess, Florist, East New York, for two unusually large specimens of Daphne Cneorum.

A. C. Chamberlain, Florist, Brooklyn, for a fine and large display of his Patent Moss Baskets, containing fruit trees and flowers, grown entirely in chemicals.

Mrs. John Humphries, large basket of plants in flower.

Mr. Pardessus, Wardian cases.

Dailledouze & Zeller, for a display of Monthly Carnations.

In our advertising columns will be found a notice of the June exhibition, to which we direct special attention.

BANGOR (ME.) HORTICULTURAL SOCIETY.

The following are the Officers for 1862.

President—Albert W. Paine,

Vice-President—Samuel H. Dale.

Recording Secretary—Fred. C. Low,

Corresponding Secretary—J. Wingate Carr,

Treasurer—John E. Godfrey.

This society has not made much progress till within a year past. At the last meeting we had a larger number present than we have had for ten years past, and all seemed to take a great interest in the society. We are bound to go ahead. The society is about beginning a Horticultural Library, and they would request the Librarians of the many Horticultural Societies to send them their catalogues. Direct to Albert W. Paine, Chairman of Library Committee.

THE
GARDENER'S MONTHLY.
DEVOTED TO
Horticulture, Arboriculture, Botany & Rural Affairs.

THOMAS MEEHAN, Editor.
W. G. P. BRINCKLOE, Publisher.

JULY, 1862.

VOL. IV.---NO. 7.

Hints for July.

FLOWER-GARDEN AND PLEASURE-GROUND.

All who have given attention to hardy shrubs know how unsightly the prevailing fashion of winter shearing—for we cannot dignify the practice by calling it pruning—renders the bushes; and yet all feel the want of some method of keeping them within bounds, and in a somewhat cultivated form. If the strong shoots are thinned out now, all this trouble is obviated. The same remarks apply to street trees, and all others that it is desired to keep low and bushy to the base.

Hedges must be served in the same way. Trim off—regarding a due conical shape—all strong top shoots, and suffer the weaker and lower ones to grow as widely and freely as they will.

Plants set against wall and piazzas frequently suffer from want of water at this season, when even ground near them is quite wet. Draw away the soil around each plant so as to form a basin; fill in with a bucket full of water, allowing it time to soak gradually away, and when the surface has dried a little draw in loosely the soil over it, and it will do without water for some weeks. This applies to all plants wanting water through the season. If water is merely poured on the surface, it is made more compact by the weight of water, and the harder the soil becomes, the easier it dries; and the result is, the more water you give the more is wanted.

The time is coming when transplanted trees of the past fall and spring will suffer more than during any other part of the season. If they show a vigorous growth of young wood, no danger need be apprehended, as it indicates that the roots are active, and can supply all the moisture the foliage calls for; but if no growth has been made, no roots have been formed, and the leaves are living for the most part on the sap in the wood and bark, and hot, drying weather will tell with injurious effect on such trees. This is generally first shown by the peeling off of the bark on the south-western side of the tree,—the most drying aspect; and where such exhaustion appears probable, much relief may be afforded by cutting back some of the branches, syringing with water occasionally, shading the trees where practicable, or wrapping the trunk in hay-bands, or shading the south-west with boughs or boards.

Chrysanthemums should be examined, and if the shoots thrown up are thickly together, some of them should be rooted out. If the flower shoots are layered into four or six inch pots, they make very pretty dwarf plants, that are well adapted to neatly ornament a room or small conservatory, where larger plants would be objectionable.

Fuchsias in pots should have the coolest position of the flower garden assigned to them. They usually suffer much from Red Spider, which make their leaves drop. The various remedies we have so often recommended should be applied. Frequent heavy syringings are particularly grateful to the Fuchsia.

In most kinds of soil the keeping the surface loose by hoeing and raking in dry weather will be an excellent method of keeping the main body cool and moist,—admitting the air, which is a good non-conductor. In soils however, which are deficient in loam, and in which sand prevails to a great extent, frequent stirrings have a drying tendency, and a mulching of short grass, or decaying vegetable matter of any kind will be found very useful around transplanted trees, shrubs, and other things.

FRUIT GARDEN.

Fruit growers are at this season commencing their harvest, and from all we hear will this season gather a bountiful crop. One of the pleasures of this department at this time of year is the making

of notes for future improvement. Some kinds often inferior in some localities, excel in others, and one should enquire around amongst the neighbors, and compare notes. It costs no more to raise a good variety than a poor one, while the value is often double. Large fruit trees need not be replaced when found inferior. They can be regrafted at the proper season with others found to do better than the ones possessed. After all the trouble about cracking of the Butter Pear, and the peculiar diseases of other varieties, this is about the best "cure."

Where new Strawberry beds are required to be made that will bear well the next season, the very first runners of the season should be selected, and layered into small pots. In about three weeks they should be cut from the parent stem, and left to a separate and independent existence for a few days. After preparing the ground properly for their reception, the pots should be well watered and the plants turned out into the spots designed for them. They will then grow finely the present season, and bear surprising crops of fine fruit the next Spring.

A warm sandy loam is the best for a Strawberry bed. A low and damp one, is of all the most objectionable. Though warm and dry in one sense, it should be rendered capable of retaining moisture in the dryest weather, and this can only be perfectly accomplished by draining and subsoiling. If the latter is done three feet deep all the better.

Unless in very sandy soil, a very heavy dressing of stable manure is objectionable. Wood ashes, ground bones, and matters of a mineral nature are more advantageous.

Strawberries for forcing are treated in pots, as we have already described; but instead of being transferred to the open ground, when well rooted in the small pots, are repotted into five or six inch pots, and these latter plunged in the ground to their rims in a spot the most favorable to Strawberry growth.

After having grown well, and when they show signs of having formed a good strong crown, they are to be taken out of the open ground and gradually ripened by withholding water,—taking care that it is not done so suddenly as to make the plants wither, or they will suffer much. Towards the winter they can be set in a cold frame and covered with dry leaves for a slight protection from the frost till wanted. Many commence to force at the beginning of the new year, when they are brought into the greenhouse and must be set near the glass. A high temperature is fatal. 45° to 50° is sufficient for a few weeks, and 55° to 60° when the fruit is fairly set. They love to be frequently syringed, and guarded against Red Spider, which is their greatest pest. Where there is not the convenience of a greenhouse to force Strawberries, they may be had a few weeks earlier than usual by making a piece of ground slope to the south-east, planting out as already described for garden culture, and then setting a glass frame over them. The nearer the frame and glass can be brought to the soil, the better and earlier will the crop be. Protecting from frost in Winter also adds to the earliness of the crop. The earliest variety to be had in the locality should be employed.

The thinning of fruit,—watching of insects, especially borers in Dwarf Pears, Quince, Apple and Peach,—and summer-pruning, are the main subjects of attention at this particular season. Where the soil is not very good, as may be noted by a weak growth of the trees, a surface manuring may be yet given with advantage. Every day's experience more decidedly shows the great advantages to the pomologist of this method of applying manure.

VEGETABLE GARDEN.

Beans and Peas may still be sown, if done at once, with a fair chance for a late crop. The earliest kind of corn may also be sown with a chance of its coming into use, if it escape the grub. Drumhead Cabbage and Savoy may also be set out still in good rich soil, where they will yet have time to head before frost in the Middle States.

The main crops requiring attention now will be Celery, Endive for salad, and Turnips. The latter merely to have a few early: August being the season for the chief or staple crop.

So many hints have been given on Celery culture in our columns, that we will not offer any here. A communication at page 70 of Vol. II., and page 356, Vol. III., we may refer to as being of great value to the amateur.

There have been many ways recommended for staking and supporting Tomatoes. The finest fruit, and, indeed, the heaviest crops, are obtained by allowing them to trail on the ground. The soil between the rows being first heavily mulched with short grass from the lawn mowings to keep the fruit clean. This method is coming into almost general practice in this neighborhood, through its tested excellence.

Where they grow too rank, and the branches mat too closely, they should be thinned out. Nothing is gained by leaving many shoots grow together, either in this or any crop.

Beets may still be sown for Winter use, if the crop sown last month are likely to be deficient.

Communications.

NOTE ON WISTARIA SINENSIS.

BY E.

SINCE the gloriously beautiful "Consequana vine" (*Wistaria sinensis*) has been in bloom—and surely it never showed a greater wealth of flowers than it now displays—I have been asked repeatedly what was the origin of the name it bears. It may be agreeable to your numerous readers, who are curious in such matters, to be referred to the author's own account of it in Nuttall's "Genera of North American Plants," published in the year 1818. A foot note under "WISTARIA," vol. II., page 115, says:

"In memory of Caspar Wistar, M. D., late Professor of Anatomy in the University of Pennsylvania, and for many years President of the American Philosophical Society: a philanthropist of simple manners and modest pretensions, but an active promoter of science."

In the text the name is erroneously spelled Wisteria, which has given rise to misapprehension.

EVERGREENS.

II.—THEIR EFFECT.

BY F., LITHCOMBE, VA.

IN the May number I have advanced the opinion that the present fashion of planting gardens and pleasure-grounds with a large number of evergreens is an injudicious one, and that it is a mistake to consider them as making a place look cheerful during the winter season.

How much more does this apply to summer! Any place on which evergreens—that is Coniferous evergreens—exceed *say one-third* of the number of trees and shrubs on the ground, will, I venture to declare, have an arctic, misanthropical, funereal look.

There are two reasons why evergreens sober down the cheerful aspect of general vegetation. One is the absence of light in their leaves, which, from their shape and texture, cannot absorb and refract the light. The other is the stiff shape and habit which counteracts the general *wave* of creation. *Love* and *duty* are no stronger contrasts to each other than deciduous to evergreen trees, and they have about the same effect on our minds as these.

Do my readers grant this? If so, I would beg them not to run into the other extreme, and to banish evergreens from their grounds. Let them try the effect which a place would make on them planted with deciduous trees and shrubs exclusively, though in all their variety of shape, size and foliage. They will unconsciously miss something, and when they leave it, they will carry away a feeling of flatness, just about as if they had moved in a crowd of all men—or all women. And if all imaginable devices of architecture, such as statutes, fountains, etc., were lavished on the grounds; if they were broken by the gaudiest flower-beds, etc., that flatness will still be experienced. Tourists often feel it, mostly without knowing why, when they visit those palatial grounds in European countries, which have been laid out one or two centuries ago, and according to the rule: more particularly such places as date from that abnormal time when people thought that the essence of art consisted in eradicating nature; when women wore powdered toupées over their natural heads of hair; when men studied heraldry and measured their degree in creation by their ability *not* to work; and again, when the same men and women, taking the freak at the other end, condescended to ape unsophisticated nature, and played the Damon and Phyllis game. In that period of history, we hardly meet anywhere with any character of true greatness in arts or poetry, and with but very few of excellence in science or in public qualities. And it was in those "good old times" that the topiary art—Heaven save the mark of that art—flourished its best.

Suppose now, we search for the reason why we want our share of evergreens. I believe we shall find that reason in our own hearts.

A never clouded sky, a constant round of gaiety, an unbroken source of love, continual verdure, the perfection of virtue, the undimmed light, all these we cannot bear long, as little as an exclusively deciduous vegetation. Our constitutional imperfection makes us unfit for unalloyed happiness. Noontide is fortunately of but an hours duration. By our nature we want ebb and flow, light and darkness, mirth and gravity, work and pleasure, heat and cold, deciduous and evergreen trees.

This much wants the civilized humanity of all countries. The Anglo-Saxon race, however, require an extra dose of that strong article—the dark side of nature. For it has not the voluble tongue of the Frenchman or the Celt, which carries its heart and its mind on that tongue, and uses it, not only as a motive power through life, but also as a safety valve against all cares. Nor has it the fatalistic sternness of the taciturn Spaniard or Arab, with its vent, the ever ready passions. No, the Saxon, Anglo-Saxon, and third progression, the Americo-Anglo-Saxon, has

something in them which we best call melancholy or sweet pain. In such mood we like to leave "the world" and enter the pine grove. There, amongst those sublime columns of evergreen, our mind soars above this terrestrial valley, reverts to the solenin past, aspires to the heavenly future, and regains its equipose. The gloom of our mind has met with its expression in Nature herself, and surely the evergreens have done us good.

And would you for once like to see this grave countenance of nature lit up with the charms of a smile? Go to the Pines and the Spruces and the Hemlocks, in the month of May, when their leafbuds open, and you will see the glorification of the evergreens. No finer sight than this in all creation; and how we enjoy it!

With this same gravity, which so charms us, we like to tone most of our surroundings. We carry it into the decorations of our rooms, into the composition of our library, into our dresses, our conversations and our gardens. Very often, but not properly, we call it character.

It is, in fact, the bass string on the instrument of our soul, on it rests the gay melody which slumbers in the tenor. Or you may call it the dark filling, that heightens the colors, but is itself not seen.

As an example, among many, how this melancholy finds its expression, I will mention the fondness of Anglo-Saxons for making a garden of their last abodes, and for visiting the dead; and that too in spite of the knowledge that our imperishable soul scorns the homage shown the mere dust. The people even, who have none to visit in the cemetery, like to wander there.

Disguise it then as we may, the forms even of adversity attract us. They clutch our nerves, and raise emotions in us. We like to feel strongly, and we like to see the house of the dead, and the pine waving mysteriously over it. Else, why came Gray's Elegy to take that place in the human heart? Else, why go and weep at tragedies? This pulsation of our heart's blood, this grasping of the imagination into the undefined, this gentle feeling of melancholy, are but so many different phases and necessities in the life of our brain and our nerves. We want them and we court them. And so—reader, forgive the jump—we want evergreens, and we will have them.

They, then, who plant nothing but deciduous plants, must needs lack character and be something of vapid, insipid beings, whilst they who, not ignorant of the effect of evergreens, load their places with them, must be grum sort of bodies, with a tinge perhaps of the lachrymose, anchorites, or passing into second children. They both sin against taste.

How are we to steer clear of the rocks? how get to the secret of the proportions and the quantities? how, in fine, apply our evergreens?

If leave be given by the Editor, a third article will attempt to show it.

[Ladies have usually such correct notions of taste, that we are generally predisposed to make space for their communications on these subjects. We need scarcely say, that from one whose graceful thoughts are so beautifully expressed, and who has the gift of suggesting ideas at once so entertaining and instructive, a third article, as proposed by her, will be very welcome to our pages.

A GUARD AGAINST THE CUT WORM.

BY S., ERIE, PA.

I HAVE been exceedingly annoyed this season from the ravages of the Cut Worm and have been led to adopt the following cheap and simple expedient to protect the Cauliflower, Cabbage, Tomatoes, Melon, etc. It has proved quite successful, and is now submitted for the benefit of those similarly disturbed:

Make a hoop or band six inches in diameter, and as many broad, from the veneers or sheets of wood used by band-box manufacturers as a body for their boxes; place these at the time of setting out around the plant, heaping the dirt on the outside about two inches high, and slightly packing the same. The material for one hundred bands will cost less than fifty cents.

THE PLUM KNOT.

BY DR. T.

MAY I be permitted to observe that I think your modest observation in the last month's Hints, that it was a fact well known that the knot only appeared on old wood, is underestimated. I have made the matter a subject of attention, and I never heard or read of the fact, (for such I now believe it to be), and think you deserve the credit of it as an original, and, I think, a very valuable observation. I must confess to having, until now, been a believer in their curculio origin; but since your hint has placed me on a new track, I have followed it up, and am satisfied you are right. So far as I have examined, I can find no knots on wood less than two year old; while it is well well-known to entomologists that the excrescences which are known to be caused by insect punctures, are invariably on the young and

succulent wood. Further, excrescences are never formed by insects on other trees, but when the trees are in growth; but the Plum knot commences to appear about the middle of May, and others continue to appear until the advent of frost. I have seen small ones burst through in September, and, by the cessation of the season's growth, get no larger than peas. Had I given this fact a thought, it might have taught me the curculio had nothing to do with it, as they do not work so late in the season.

Since your last issue, I have almost daily watched a plum tree for the appearance of the knots, which was attacked last year for the first time. None of these have appeared so far on any thing less than four year old wood. Most of them appear in the main branches, as thick as my wrist. The curculio has had all my crop of plums for years past notwithstanding. It is interesting to watch the upheaving of the bark. In some places where the knots appeared, the old dead bark, where it was burst apart, was near one-eighth of an inch thick. No signs of an insect can be detected in the mass of matter till some weeks after it is formed, and then an examination shows that the insect is deposited on the *outside*, and works it way *inwards*. A three weeks old knot, that may be an inch in thickness, will show the insect larvæ to be but from an eighth to a quarter of an inch from the surface.

Now in all cases of galls, and other excrescences *known to be* the work of insects, the matter grows *around* the larvæ, extends and *pushes beyond*, and completely encloses them. There is no such a plan in the Plum knot, and the inference is just from this alone that it is not the work of an insect.

But there is yet another fact which I think is more conclusive that the curculio at least does not cause the Plum knot, than any thing you or any one has suggested. A mere incision of the bark alone will not cause an excrescence. If we insert a penknife into a plum tree, no plum knot follows. There must be an acid gall infused into the sap by the insect to cause the swelling in question. This property is, I believe, entirely wanting in the curculio family. I am but a dabbler in entomology, but perhaps such proficients as your correspondent, Mr. Rathvon, can correct me if I err, but I believe it to be a fact that few other insects but species of *Cynips*, have this excrescence producing power, and certainly not curculios.

To me your remarks have an original shape, and I have been moved in turn to give you their result on my own mind, which you can use or not as you think proper.

[We are never over anxious to claim originality, satisfied, by experience, that those who are have few other good qualities to claim. We are proud, however, that our remarks have elicited such a practical scientific communication, and hope the examination of the subject, by actual observation, will be closely followed up by our friend and others who have more time to bestow on it than we have, and let us have the result.—Ed.]

FRUIT PROSPECTS IN SALEM, INDIANA.

BY W. B. L.

I will give my experience in growing Catawba Grape vines, etc., from cuttings, in tan bark. I took very old tan and spread three inches thick on timothy sod, spaded the ground one spade deep, spread twelve inches of tan on that, put in the cuttings, which had been some weeks buried in the earth. They grew fine, rooted well, lost but few. Again we spread twelve inches tan on sod, and put in the cuttings two or three weeks earlier, two-thirds of them failed.

Made a box 4½ x 12 feet, 18 inches deep, filled with tan; raised it eight inches from the ground, split the bottom boards so as to leave numerous small cracks to admit air and heat, filled with Quince and Althea cuttings, the former nearly all perished while the latter all grew. Perhaps water was not given sufficiently.

A fair prospect now for a fine crop of Peaches in this section of country. We have a section of country here called the *Zenobs*, in which the failue of a peach crop is a rare occurrence. Trees are being planted pretty extensively for the Northern markets. Land is cheap; transportation good by railroads.

LIGHT IN PLANTS.

BY JOSEPH AMRAM.

Dr. Furnrohr contributes to the March number of the *Regensberger Flora*, a translation of an article of Theodore Fries, from the Swedish of the *Botaniska Notiser*. In turn, I translate and work up for the readers of the *Gardener's Monthly* the following; premising, however, that the very name of Linnæus gives me relish for any botanical knowledge coming to us from Sweden.

The interesting phenomena of light in plants require the triple study of botany, physics and chemistry. Excepting a few facts, anything like positive knowledge has yet to be obtained. This Light may be classified into two kinds: First, Continuous—mostly phosphorescens; Second, In the form of lightning.

Decaying wood belongs to the first. A fungus (*Bynus phosphorea*, L.) has till lately had the credit for it, but Retzuis, Von Humboldt, and Bishop Agardh (another Swede) agree in ascribing to the wood itself the faculty of shining.

Any kind of wood, if we believe Dessaniges, can get phosphorescent under certain conditions, viz., a proper degree of decay, thermometer 8 to 12° C.; sufficient dampness and atmospherical air. We find it however mostly with alder, beech, white pine and willow wood. They shine before actual decay, but moisture rules the intensity of the light —the less moisture the less light, no moisture no light. Where the shining has ceased, it can be restored by a little cold water thrown on the wood, and by enveloping it with paper or canvas.

Temperature, we believe, is of no account, so the thermometer does not exceed either the boiling or the freezing point, as in either case *the water* would disappear.

But not decaying *wood* alone has this phosphorescence; other parts of plants have it when decaying. Thus *Meyer* tell us that wandering by night through a forest he found decaying mushrooms in a phosphorescent state, and that he took up the shining matter with his stick and rubbed against trunks of trees.

Tulasne has given us a very interesting treatise about the shining of dead oak leaves. Moisture is in every instance a necessary condition. Of all things, however, it is the *Diptam* which is best known for its remarkable and beautiful light, circling round the whole upper part of the plant, when, after warm and calm days, a match is brought near it. It is the ætherial oil, evaporated by the plant which burns, and makes it appear as if the atmosphere round the plant was in a mild blaze. The beauty of this phenomenon is worth trying it, and enduring the failures which an unfit condition of the atmosphere will often bring.

Less strong than the Diptam, but stronger than decaying wood, shines the milky sap of *Euphorbia phosphorea*. *Martius*, during his travels in Brazil, found it to shine mostly when a storm was coming on. He also relates that he was told by the natives of a Euphorbia growing in impenetrable thickets of several thousand square feet, which often spontaneously ignite, emit a column of smoke for a while and ultimately blaze in a clear flame.

But not dead matter alone has this phosphorent quality. We find it in living plants, for instance, *Rhizomorpha subterranea*, a fungus found on decaying trunks or on timber used in moist mines, emitting light from the tops of its branches so strong that, according to DeCandolle, you can read by it; or, *Agaricus olearius*, a fungus growing on the olive tree, which shines best when vegetation goes most forward, and which fact Tulasne therefore calls "une manifestation de l'activité de sa végétation."

The cause or causes of the phosphoresence of these plants have not been found. A very long range of experiments under all temperatures and at the various stages of vegetation would be required. This explains also why the statements of botanists differ so much—why one has never found that such and such plant emitted light; why the other asserts that only the lamellæ of different fungi had it, etc. We must, however, here mention a no less interesting phenomenon than either of those already stated. It is offered to us by *Schistosga osmundacea*, a moss growing in caverns and grottoes, which in day-time is in a state of lucidity, similar to the smaragd. In this instance, the structure of the plant, as the rays of the sun refracted on it seems to be the cause, though we would not like to vouch for it.

We would rather speak now of the second class of light in plants, namely, where that light appears in the shape of lightning. And the first observation it appears has been made by Linnæus' own daughter, Elizabeth Christine, who found that one evening in the year 1762, the orange flowers of *Tropæolum majus* produced a kind of lightning,—that is, the flowers seemed by fits and starts to dash light. She ran to her father, not believing her own eyes. But the phenomenon had disappeared when the father came, and what he had never seen nor heard of he would not believe in till he had seen it himself. On subsequent evenings, however, he himself witnessed the fact, whereupon he asked his daughter to make a report of it to the Royal Academy of Sciences. This report has been accepted, and exists on the record. We are sorry that we have to add, that neither the great Linnæus nor his daughter, nor Linnæus' son, nor any one of a great many chemists and botanists who undertook to study the matter, could to this day succeed in telling us any thing better than suppositions, which were hardly uttered before upset by themselves, and amounted to nothing. If the stirring up of observations, the reiteration of facts, the discussion of probabilities, not to say possibilities, can ultimately lead the investigating mind to the true cause, then there is hope for our enlightenment. But as we doubt that, and will not weary our readers, we will, before we conclude this article, tell them that electricity seems not to have any thing

to do with these phenomena; that orange color of high intensity and fire seem to have a good deal to do with it; that weak eyesight does not cause it, as Linnæus naively says, and that besides Linnæus' daughter, *Lector Haggren*, (also a Swede,) noticed it in the year 1788, on *Calendula officinalis*, *Lilium bulbiferum*, and *Tagetes patula* and *erecta*, also, but very slightly, on the orange variety of the sunflower, *Helianthus annus*. Lastly comes Mr. Fries, and tells us that he was induced to write his essay on Light in plants, by one night walking about in the botanical garden (in Upsala) and seeing lightning shooting up from an isolated growing plant of *Papaver orientale*, strangely enough after having passed a large group of them without seeing any thing. That he then led other persons past who did not know of it, and they were equally struck by the sight, and that he then began to study the light in plants. May he be able to enrich science with the knowledge of its true causes.

HOW LATE IN SPRING CAN GRAFTING BE DONE?

BY F. GAUL.

It is generally believed that the season of grafting is limited to a few weeks in Spring, but I have found by experience that it can be successfully accomplished at any time from March to July, provided the scions are taken off and heeled in a cool place where the buds do not burst much. I annually graft hundreds, and have each year prolonged the season, until last year I was grafting pears up to the time of hay harvest, and with entire success. Grafts, as a rule, are more certain to grow when delayed a little in Spring than when put in too early, before the sap is well in motion.

This scrap of information may be of great use to nurserymen, who in their busy planting operations have little time to spare for grafting; but which, if their grafts have been properly preserved, they can do after all their rush of setting out stock is over. I usually graft by cleft grafting, and though many new modes have been recommended, scarcely wish a better. Certainly none can be more uniformly successful.

[A friend has handed us this, as having been communicated to him by Mr. Gaul, who is well known in this region as having "followed grafting" almost exclusively as a living for nearly threescore years. In so long a course, Mr. G. must have met with many interesting facts in his favorite art, that would no doubt be of great value, and we hope our correspondent will use his influence with his friend to furnish us with more of the same sort.—Ed.]

OUR NATIVE PINES.

BY EVERGREEN.

Having observed some very pretty specimens of some of our wild Pines, in their native localities, I determined to plant some on my own grounds; but on sending an order for them to one of our principal nurseries, I was astonished to have the reply, that "they did not grow them, nor knew where they could be obtained." Sometime afterwards I met one of my correspondents, and referring to my order and his reply, I expressed surprise that nurserymen could not perceive that it was to their interest to keep all these beautiful things, and that they should consider it one of their duties to lead the public taste out of the senseless rush for foreign novelties, to the perception of the greater beauties to be had near their own doors. He replied to my strictures that it was not a nurseryman's duty to lead or correct public tastes, but to supply public wants; that he fully agreed with me about the beauty,—the, in some instances, excelling beauty of our native Conifers,—and that if I could ensure him a sale for the trees after they were raised, he would engage to supply them. Here was a challenge. Having in a sense thrown down the glove, I must accept the consequences, so if the *Gardener's Monthly* will afford me the necessary quantum of space, I will endeavor to say a few words on our Native Evergreen Trees.

Of the Pines I am familiar with only those of the Northern and Middle States; and first let me say that I place first on my list of beauty,

The Pitch Pine, (*Pinus rigida*, Mx.)

Though pretty well acquainted with our native trees in their wild state, I am inclined to think this a scarcer tree than it is generally supposed to be. It has very long and slender leaves, nearly as long as those of the European *Pinus Pyrenaica*, but they are much more graceful than in that striking species, and are of a very pleasing dark azure green. The leaves are always in clusters of three, and there is always turpentine on the buds, by which it can be readily distinguished. The cone is long and slender, usually about two inches long by one broad or in such proportion, and of a somewhat ovoid shape. There are small spines set straight or slightly ascending on the scales, one on the apex of each; and the seeds are very small not much larger than a good sized cabbage seed, and black.

It does not generally grow as large as some of the other pines, and when seen in thickets, is not by any means a striking tree; but when growing in an open space, with branches close to the ground, is equal if not superior to the rare Mexican *Pinus in-*

signis, which it much resembles, so far as I can judge from small specimens I have seen in choice collections, and of which I have often heard expressed the great regret that it is not perfectly hardy in our severest winters.

Fearing I may seem too prolix on my native pine hobby, I will in this chapter refer to one other favorite only,

The Yellow Pine, (*Pinus mitis*, Mx.)

I have seen specimens of this in rich open lots, which were far superior in beauty to the Austrian Pine, and I am sure that it is only because it is almost always seen in clumps and thickets, destitute of lower branches, that it has not been considered worthy of cultivation. So far from being naturally a "scraggy" tree, it thickens in more naturally than any pine I know; and when woods of them have been felled, I have frequently seen them throw up new shoots around their stumps, as freely as if they were chestnut stumps.

The leaves are in two's and about the same length and consistency as the Austrian Pine, but of a paler and yellowish color. I have usually read the descriptions of this tree in botanical works, as bearing very small cones; but this is by no means the rule. They are very variable—sometimes being long and slender, say an inch and a half long by 2 or ¾ inch wide, and others near 3 inches long by 2 or 2½ wide, or nearly round—occasionally, indeed, they are wider than they are long; and the seeds vary in size according to the size of the cone.

The scales of the cone, as in the case of the former, are also crowned by a spine, which is thicker and shorter than in the other species.

This kind is believed to be a much faster and a stronger grower than the other; but in good soils I doubt if there would be much difference found. At any rate, the growth is about equal to the Austrian, with which I have already compared it.

I have been minute in describing their characters, that parties who wish to try their cultivation may the more easily be enabled to distinguish the kinds.

PROPAGATING NATIVE GRAPES.

BY S. EBERT, DENVER CITY.

I notice in the April number of the *Monthly*, an article upon the propagation of the Native grape. I have tried the propagation of grapes a number of ways out here, without success until the spring of 1861, when I succeeded in this way:—I took the cuttings off before hard frost, and keep them in damp sand or saw-dust till February; then cut them into single eyes and insert a small piece of grape root just under the bud, putting a little grafting wax on, and plant them in a soil with a good bottom heat; taking great care not to keep them too wet. By this process the eye receives a supply of sap until it forms roots of its own. In the spring of 1861, out of 1000 eyes I rooted 931, with very little care or trouble.

LIMITED DURATION OF CERTAIN VARIETIES OF PLANTS.

BY C. G. PAGE, ESQ., WASHINGTON, D. C.

The fate of the new Tea Rose, General Washington, affords a striking illustration of the theory originally put forth by Mr. Knight, of England, that every variety of plant had its period of existence. Many of us can remember when the celebrated St. Michael's pear began to fail all over the world, and have witnessed the simultaneous disappearance or decline of other varieties in like manner. The General Washington rose was a beautiful and promising tea rose. It was sent out at a high price, five dollars, and I fear that its purchasers, fortunately few, will be disappointed. This Winter and Spring every plant of it *here*, large and small, cuttings and buds, in doors and out, "*took sick*" and died. The original bush is still alive, in the open ground where first reared, but is perishing slowly and certainly. This universal fatality gives evidence of an inherent constitutional defect, and illustrates the precocity of certain organizations, for, up to the time of the appearance of decline, it was apparently healthy and full of promise.

If those who received the rose will report its loss to me, I will see that they are furnished with a new variety gratis, (except the cost of transportation), of a superb Tea, with Noisette habit of growth after the manner of the Gloire de Dijon and America, the flower being very similar to that of Duc de Magenta.

PLUM KNOT.

BY A. S., POTTSTOWN, MONTGOMERY CO., PA.

In your last issue, you dispose of the Black Knot rather summarily, I think. It is with the curculio as with every thing else; to master the subject requires observation and thinking. I beg leave to differ with you for the following reasons:—In the first place the curculio commenced stinging plums and choice cherries about the same time that the Black Knot appeared in the same trees, mostly some twenty or twenty-five years ago, in this region, and is getting plentier yearly, and bids fair to de-

stroy all of the above-named fruits. Again, you will find knits or eggs in most, perhaps all of the knots. Thirdly, one year ago this Spring, I shaved a couple of limbs thoroughly of their knots, and tied cloths around to prevent access to them, (it would be well to tar the outside of the cloths). The cloths remained on all the season and fall. Sometime during the following winter they became loosened and came off; I examined the wounds and found them about half healed over and perfectly clean. Early this Spring I examined the wounds occasionally, and one time found a curculio *stinging* the new bark or wood, which had been formed the preceding year; shortly after, I found excrescences breaking out all over the same. Now this matter appears plain. Of course this is but one trial; more will be required to prove it beyond dispute. Let a number who feel interested, shave some limbs thoroughly, and cover them well with cloths, and let other shaved places remained uncovered; this will settle the matter.

You seem to think that the curculio should sting the newly formed wood of the first season's growth, if it sting the wood at all. The most, though not all, of the wood stinging is done in the fall,—late, or early spring,—before there is fruit to sting; and the new wood is probably stung in the fall or early spring, and not while in rapid and succulent growth; if it were stung it would die and the knot with it. You will notice that where young fruit is stung it falls off without maturing the curculio worm, and as a consequence, not much is stung until considerably grown. You will also notice, that where *new* bark is stung, that the warts get hugely large very suddenly, owing doubtless to too much water or sap. And in old bark, there are frequent holes or slight burstings, which the curculio finds, and deposits its eggs in. You will find them creeping all over the trunks of trees.

The curculio is an exceedingly cunning insect—plums will be stung but once, sometimes, and seldom oftener, twice, if "let alone;" but press the *knits* out with a knife blade or other *sharp* instrument, and they will return and sting the fruit until the whole is covered with scars. It is very doubtful whether any remedy will be discovered for their destruction, until providence does it, as they mind nothing opposed to them, and death alone stops them. Bottles hung on trees, partly filled with sweetened water, catch a few, and cotton placed around the stems of the trees, stop those who go "a-foot;" but a few days of fine weather will cover the trees with them from a distance, and the work of stinging is soon done. Jarring is certainly the most effectual remedy.

I have but a couple of plum trees, and have been watching them closely, and catching the insects by hand, I have been amused by some of the new comers: they would alight on a limb or leaf or plum, and stand up on all fours, with their snout sticking straight out, in high glee at the apparently fine field of operation before them. I cut them short, however, with a goodwill. I also caught a curculio *in the act* of stinging an apple of an early variety, this spring; and also saw the "crescent" on a fine young pear; whether it will destroy them or not I cannot tell, I failed to mark them.

In passing over the country one sees the May, Pie, and Morello Cherry trees, and other fancy and good kinds, covered with knots. When you ask why they don't remove them, they will tell you, "'Tis no use." I have saved three Pie Cherry trees without much difficulty or labor, simply by removing the knots *as fast as they appear*, especially in the early spring, when new shoots will come out to replace those cut away. You must not wait till the tree is covered over with the nuisance, and consequently when the life of the tree is gone, as the knot appears to be exceedingly poisonous to the wood, which is doubtless owing to the backward and forward flow of the sap, poisoning the whole trunk.

[Our correspondent can be safely trusted to the surgery of our medical friend, who figures in another column, and who will no doubt draw the lance on him mercifully. We may add, however, by way of postcript, that to cover branches of trees known to produce knots, early, before the curculio season arrives, with muslin, so that it could not touch the bark, and then watch for the knots, would be a better trial than our correspondent proposes.—Ed.]

OIL AND SULPHUR FOR THE FRUIT TREE BORER.

BY T. T. SOUTHWICK, DANSVILLE, N. Y.

I have a plan which seems to me will prove to be a successful remedy against the tree borer. It is to paint the tree at or below the base with a mixture composed of Fish oil and sulphur. As this is the first year of the trial, I am not prepared to speak in definite terms of the result, but as both the articles named are offensive, I see no reason why a happy result may not be obtained. Will report in future, and hope others will try it and do the same. It is a new matter with me, but may be old with others.

PRUNING AND TRAINING THE GRAPE VINE.

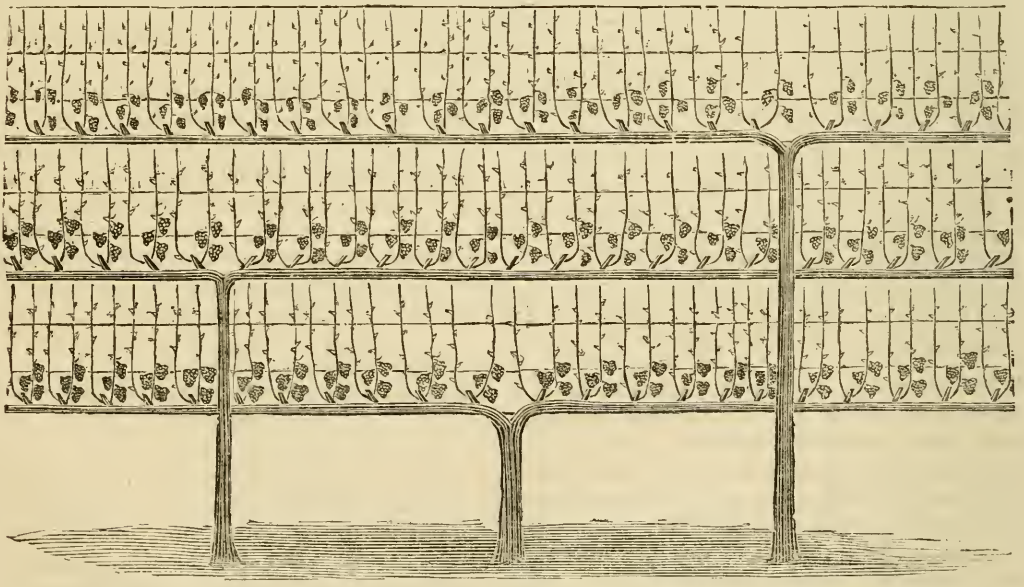
BY CHAS. P. HAYES, ESQ., PHILADELPHIA.

A TRUE knowledge of the principles of this branch of Grape Culture is very important, and so little understood by many cultivators that the results of their practice is sometimes worse in effect than if not performed at all. The importance of pruning the vine comes from its habit of climbing, and natural propensity to annually extend its branches to an unlimited extent, even to the tops of the loftiest forest trees—consequently producing growing buds where fruit buds are desired. In order, therefore, to check this tendency, and also to acquire a vigorous, thrifty, and productive vine it is necessary to adopt some system of pruning, and to commence with that system in its earliest growth.

The object of pruning the vine is to curtail its extreme growth, and to suffer no more wood to grow than is necessary for the production of fruit in an allotted space. It is I believe a well-known fact to all grape growers that fruit is never produced twice on the same shoot, and therefore the nearer we can approach accomplishing this object, the nearer we attain to the *thorough Art of Pruning.*

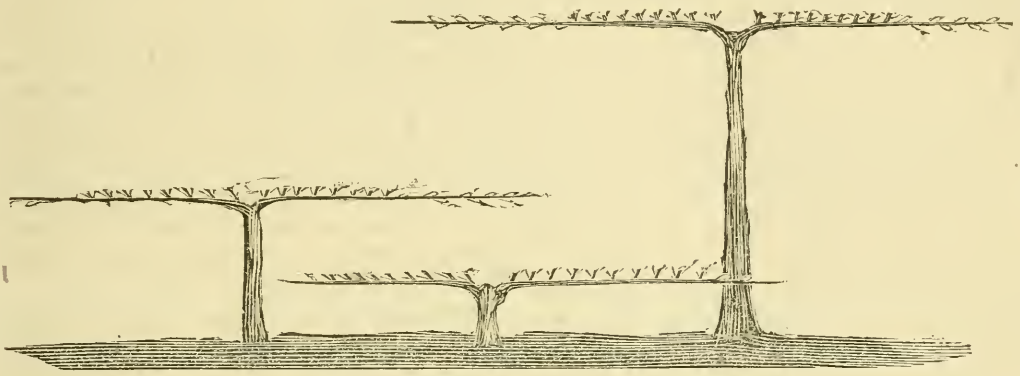
To accomplish this we must begin with the early growth of the vine, and for the first two or three years our object should be to obtain a strong stock and two arms, at such desirable height as the trellis arbor or stake may require. Then follows our system of training, and in this equal care must be had for the proper and systematic distribution of the roots in the ground, for roots and branches mutually react upon and control each other.

The modes most generally practiced in this country are the spur, renewal and the bow systems; the latter used in Vineyard Culture. These systems have been successful, when proper care has been given to summer treatment. But there is still another system, that has been but little practiced in this country, although an old and favorite system in France, called the *Thomery.* For garden or yard culture I much prefer it to any other, believing, with the same care, it will give an equal amount of fruit to a given surface, and of better quality than can be obtained by any other method, and certainly leaves the vine from year to year in a more flourishing condition than any other mode I have ever seen adopted.



This system is simply to extend from a given height of stem the two arms, (as in the Renewal system), about two feet the first year, allowing every six inches a shoot to grow perpendicularly. At the proper time of Fall pruning, these shoots are trimmed to two buds each, excepting the end one, and that to be laid down to the length of two feet more to extend the arms. At the second years' growth the two buds will each have produced a shoot, the uppermost one bearing fruit. At the second pruning the shoots that have been fruited are cut entirely away, and the lower shoot pruned to

two buds, and so continue from year to year. By this process the fruit can always be had at the same height, leaving no annual extension of old wood, which in other systems cannot be easily avoided. I believe it is well known to most grape growers, that vines will not continue to produce bearing wood of best quality through a series of years at a greater perpendicular height than four feet, and even at that height the greatest vigor of the vine is expended within one foot of the terminal bud.



A trellis twelve feet in length and eight feet in height may be covered with fruit in a few years by the system suggested, simply by planting three vines, each to occupy the whole length of the trellis by two feet in height. The only care this system requires is to keep the young shoots tied up perpendicularly until they have attained the height of two feet or reach the course above, at which time the shoots should be checked by stopping the terminal bud.

The advantages of this system are :—*First*, That we always obtain good bearing wood for next year. *Secondly*, we always have one ripened fruit bud. *Thirdly*, no increase of old or barren wood, and, *Fourthly*, that we have quite as much fruit annually as any vine should be allowed to bear.

It is the only system that I have ever seen by which high elevations can be permanently covered with productive shoots, and on a wall it may be continued by courses to a height of fifty feet, or more if desirable ; and it is said that in the Paris market grapes grown by this system on elevated walls, sell for double the price that those grown in ordinary open culture will command. By recommending this system, I do not wish it understood that I condemn other systems, when properly attended to.

The next branch of this subject, and of no less importance (though but little and badly practiced in out-door culture), is Summer Pruning. On this depends, in a great measure, the quality of the present years' fruit, and the prospect of the following years' crop. When practiced at all, it is usually done by stopping the bearing shoots to two joints above the uppermost bunch, and pinching in all laterals during the season to one or two leaves. From my experience this is cropping the young growth too severely. It is necessary, in order to obtain the best fruit, there should be leaves or foliage above the bunches, sufficient to secure a full supply of the proper juices to return to, and promote the full growth of the berries, and as it frequently occurs that the leaf at the base of the bunch drops during the heat of the summer, and before the fruit has ripened, there should be others left to provide the adequate supply. I have found, when stopping the shoots four or five joints above the uppermost bunches, the fruit attains a larger size, and ripens much better. By stopping the shoots too short on a young vine, there is great danger of the next seasons fruit appearing in the fall of the present year ; and it is true that fruit will not set if the stopping is too early or too severe, for too great energy of growth will produce only wood, and make the blossoms fruitless.

To secure strong growing shoots for the following years' fruit, it is very important that the laterals should be frequently pinched in during the season, only leaving a few leaves to each, so that the shoots may be only slightly shaded, for it is the light and heat from the sun thickening or elaborating the proper sap or juices that cause short jointed wood, and perfectly matured buds for the following years' fruit crop.

Another point properly belonging to this subject is Fruit Pruning. The Grape vine differs from the apple, pear and peach, and fruit trees generally, in not having the power to throw off or drop its fruit in the early stages of its growth, and will undertake to produce more fruit than it can ripen; therefore it becomes necessary to thin out the number of bunches, and on a healthy and vigorous vine, to at least one-third of all that sets. This (though seldom attended to in out-door culture) is of vital importance to the vine, and unless performed with judgment and care the vine will overtax, and ultimately injures itself, if not entirely destroy its vitality. In the Thomery System of training, this is in a measure avoided, for whilst we may confidently expect a good crop, there is but little danger of producing a ruinous one.

In this latitude the vine may be pruned at any time after the fruit is fully ripe, and before the sap begins to circulate in the spring. For young vines I prefer Fall pruning, believing that we secure a greater accumulation of sap, and a ripening and slight enlargement of the buds, which does not occur through the summer, owing to the fruit diverting and appropriating the sap to its own uses. In the fall there is a moderate ascending of the sap, which would be of little benefit, if distributed through a long cane, containing many buds to be pruned after this advantage is lost. In the system of pruning and training suggested, I wish it expressly understood that I recommend it for out-door culture, although I believe it could be equally well applied to House Culture.

In conclusion, I will merely remark that I think if more attention was given to this subject, we should hear less complaint from some of our cultivators about the entire failure of our Native Grapes in this neighborhood (for which I have seen no good reason assigned). For I believe with our soil and climate, and with proper care in pruning, training and culture, we can succeed in producing as good crops as in any region of our country above the same degree of latitude.

[Mr. Hayes is one of our most successful amateur grape cultivators, and it is a pleasure to have the experience of such practical men. In the plate representing the fruit on the vine, our artist has in some instances placed it on the lower shoot, when in all cases it is allowed to grow only on the upper shoot.—Ed.]

New or Rare Plants.

Limatodes rosea.—A lovely Orchid, with charming delicate rose-colored flowers.

Rhododendron arboreum *var.* limbatum.—A variety raised from seeds obtained from Sikkim, and having the limb of the corolla rose-colored, and the throat and inner part of the tube whitish. It is recommended for its early free-blooming habit, and at Kew was flowered in a cool conservatory.

Clerodendron Thomsonæ.—A very remarkable twining species of slender habit, introduced to the Botanic Garden at Edinburgh, from Old Calabar. It is a stove climber of moderate extent, quite smooth, with opposite oblong-ovate acute leaves, and lax dichotomous panicled cymes of flowers, of which the calyx is large, white, inflated and five-angled, and from this protrudes a deep scarlet corolla. "The contrast of color presented by its large white calyx and crimson corolla renders it a desirable plant for cultivation."

Hæmanthus cinnabarinus.—A bulbous plant from West Tropical Africa, having a few oval-oblong acute leaves, and cinnabar red flowers; it is much like H. multiflorus, except that in the latter the scape springs up laterally outside the leaves, but in the plant it forms the axis or centre of the plant with the leaves surrounding it.

Heliconia metallica.—A graceful stove plant, from Santa Martha, 6 to 8 feet high and resembling a slender Musa; the leaves oblong acuminate, a foot and a half or two feet long, velvety green above, and metallic purple beneath, the flowers handsome in an upright spike, scarlet tipped with greenish white,

The above five are figured in the May *Botanical Magazine*.

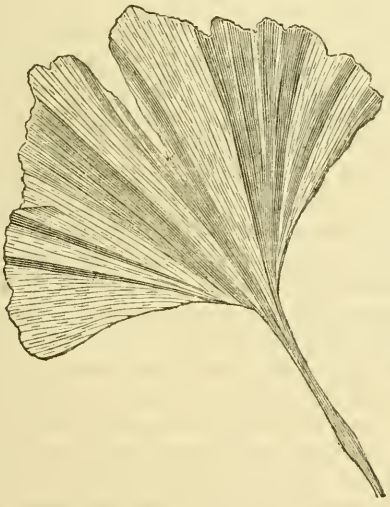
Best Roses of 1860.—Mr. Cranston, in the last issue of *Gossip of the Garden*, has some notes on New Roses, in which he says that of 40 varieties introduced during the autumn of 1860 the following nine may be taken as the cream, according to his experience at Hereford:—*Teas*—La Boule d'Or; *Bourbons*—Catherine Guillot; *H. Perpetuals*—Duc de Cazes, Gen. Washington, Jean Bart, John Waterer, Madame Furtado, Madame Melanie, and Princesse Mathilde.

Two New Camellias.—*Amœna* is perhaps the finest Camellia yet raised. The petals are beautifully smooth, carnation striped, the flower very double, and the habit of the plant excellent. The other is *Punicea*, the flowers large, double to the centre, the petals firm and smooth, evenly cupped, and of the richest crimson—so rich and bright that some of the good old reds look like brickdust beside

it; the foliage a rich deep green, and broadly oval. —*London Gardener's Weekly.*

LITHOSPERMUM FRUTICOSUM.—The first plant brought forward was Lithospermum fruticosum, from the Messrs. Lee, of Hammersmith, for which a Second-class Certificate was awarded, the plant being considered a useful rock plant, to be treated and used as a rock Cistus. The aspect of the plant at a short distance was that of a free blue Anagallis, but is more woody than that; it blooms from May to October out of doors, and cuttings of it taken in September, should be kept over the winter with Verbenas and other bedding plants, to be turned out at the end of the spring.—*Gard. Chronicle*, Report of Exhibition.

SALISBURIA ADIANTIFOLIA VARIEGATA.—Variegated-leaved Ginko, or "Maiden Hair Fern Tree." We have received from Messrs. Ellwanger & Barry a leaf of this beautiful tree, a sketch of which we annex.



With the exception of the Variegated Dogwood, Variegated Elder, Variegated Ash, and perhaps a very few others, none of the variegated leaved trees are adapted to our dry summer climate; but by the texture and appearance of these leaves, we should judge this was another of these few highly ornamental and valuable trees.

The marking is—to use a moderate expression—beautiful, and surpassing what is usual in variegated trees.

NEW TEA-SCENTED ROSE GLOIRE DE BORDEAUX.—A seedling from the well-known favorite Tea Rose Gloire de Dijon, was raised at Lyons, and is represented as being unquestionably the finest Tea-scented Rose of the season.

SARMIENTA REPENS.—This is a pretty Gesneriaceous plant, recently introduced into England, having scarlet flowers and small round leaves, and it is supposed will become a very popular basket plant, or employed in rockwork under glass.

OURISIA COCCINEA, is a scarlet-flowered, hardy herbaceous plant, allied to Veronica, and in habit like Veronica gentianoides, but with drooping scarlet flowers; from the Andes of Chili, also amongst the recent introductions into English gardens.

NEW ZINNIA.—Last season we figured a new Double-flowering Zinnia, and we have now to record the appearance of another novelty in this class in England. It is an entirely new species, not growing over a foot in height, and has bright yellow flowers, with a stripe of rich orange down each petal. As the great fault of the old Zinnia is their tall and lean appearance, this will no doubt be the parent of an improved race, that will be very serviceable for bedding purposes. Its botanical name is Zinnia Mexicana.

NEW DWARF DAHLIAS.—The new class of Liliputian or bedding Dahlias are gaining ground in improvement. The following are considered in England the best of the new ones of the past year:

German Belle—Peach rose, with white tips.

" *Snow Rose*—Pure white, a beautiful Liliputian in every sense.

Elizabeth Von Bethmann-Hollweg—White, with light carmine ground and edges, very sharply and regularly marked.

Margaret—Shining gold yellow, with purple crimson tip.

My Little Dear—White, with purple violet tips; rose form.

Little Rosa—Pale lilac rose, with white centre.

German Boy—Rose orange ground, deepening into crimson, with dark purple tips.

Princess of Liliputians—White ground, with purple-violet tips, flowers abundantly.

Pearl—This Dahlia is recommended as a Liliputian of the first order. The flowers are pure white, well formed, of middle size, and upright; when only one foot high it already flowers abundantly. Well adapted for growing in pots.

The Gardener's Monthly.

PHILADELPHIA, JULY, 1862.

☞ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box 406 Philadelphia."

☞ Persons sending two new Subscribers for 1862 in addition to their own, with $3.00, can receive a copy of our First Volume, (1859) free. All persons who have paid their subscriptions for 1862, by sending two new Subscribers and $2.00, can receive a copy of the same.

AN INFALLIBLE INSECT DESTOYER.

"Oh dear! oh dear! what shall I do with them nasty worms on the shade tree at the side walk, and the bugs on the roses; we shall have to cut down the trees, and give up growing flowers altogether." Thus, half inquiringly, half in despair, Mrs. Smith appealed to her better half, who was engaged over his evening paper, calculating the chances of a rise in stocks at the next morning's board, as the result of the last "glorious news," of a complete victory of the government forces over the rebels. "Don't know much about them things," he growled, "write to the Editor of the *Gardener's Monthly*."

But the indefatigable Mrs. Smith, despondent when humored, but importunate when crossed, was not to be put off this time; and with a "now do come out and see how the horrid things have ruined me," she led the meek Mr. Smith out as a sheep to the shearing, to behold the desolation the insiduous scavengers of nature had brought upon her garden. She could not have hit on a more propitious moment for that excursion. Another man, on such an errand, led by such a leader, would have at once brushed up his earlier studies in chemistry and the natural sciences, in the hope of suggesting a judgment on the momentous case he was led out to try; but he, wrapped in his figures and his calculations, was in the most practical mood possible, and ready to give to any subject brought before him the benefit of his matter of fact ideas.

And first, they went to the "trees in front," where all over the bare shoots the caterpillars were holding a glorious carnival, — gorging on leaflet, and hanging from limb as if in conscious security, having already withstood the most powerful attacks of the most popular nostrums that the tact and talent of Mrs. Smith could bring to bear up against them. "What shall *we* do?" now again demanded Mrs. S., feeling instinctively that from their united action some good idea was about to flow. "Don't see much difficulty," doggedly remarked her spouse, "there can't be more than six hundred on the tree altogether." "Only six hundred! and what of their number, see the damage they do us, not a leaf—." "Wait a moment, I was going to remark that there are not six hundred altogether. I am sure I could pick off three hundred an hour; and any smart many you can employ, in a few hours, would rid your trees of these vermin at once and forever."

That idea did not fall on stony ground, but on rich soil, where it took root, and the next day sprouted quite into action. By the third day after, the tree was cleaned of caterpillars,—and by the end of the week, each rose bug had gone to that bourne from whence no rose bug returned that year or the year after.

"Mr. Smith," said his good lady to him one day the next year, while beaming with the pleasure her insect cleared garden afforded her, "why don't you apply your arithmetic to the curculio in your fruit patch?" "Can't catch him like you could your caterpillars," says he. But Mrs. S. had learned something by this time. Her success had encouraged her, and she had studied Rathvon's insects in the *Gardener's Monthly*, and was ready with an answer. "You could not catch the moths that originated the caterpillars, but the caterpillars, their larvæ, did not escape your unerring figures," she archly replied, "and if you cannot catch the curculio, cannot you destroy its larvæ also?"

Mr. S. took the hint. It was May; the cherries were turning color; the plums were well set; the peaches, apples and pears gave promise of an abundant crop, only for the mark of the little beast on their waxy fronts, which told a suspicious tale. His mind was made up; before night John got his orders, and before another sun had set, every cherry, peach and plum,—every fruit, good, bad, and indifferent,—that could afford a nidus for the curculio, and probably had, was carefully gathered and committed to the flames. There was no fruit left that year, and we suppose no insect eggs left to rear another crop. But whether it was worthy of the sacrifice it is not for our pen to tell; all we know is, that the little Smiths were set to reading of Æsop's fables the last winter's nights, and *that* one was particularly underscored for their attention, which relates how a certain man, on his death bed, set his lazy sons trenching up the ten acre lot in order to find gold, which they only found in the increased productiveness of the deep tilled land after all; and the moral we draw from the whole

story is that a little more labor and perseverance on the part of horticulturists, would render the numerous insect destroying nostrums as valueless as love powders are usually found to be.

LAWN MOWING MACHINES---A NEW TROUBLE.

As we move forward in the path of improvements, unexpected impediments continually present themselves. Some miserable little creek, of which we had never thought, must be bridged; some terrible lion in the road must be dislodged; or, some dark shadow, with no other power but to fright our souls, must be softened by the light of reason, before the pioneer can point out a safe and easy path for the one who follows. He who starts on a new track is continually beset with difficulty, which those who bring up the rear have no idea of, though "he might have known" is the sinister comfort they generally bestow on their benefactor, while reaping the rewards of his persevering zeal.

And so "you might have known," said we to a friend recently, who was almost in utter despair at the miserable condition to which his lawn had been reduced by the use of his new lawn mower.

"Yes," said he, "you Editors, who sit like cats in dark closets, and see and study every thing no one else can, 'might have known,' and should have told us; but we, who gaze so steadily on the sun of improvement, get dazzled by its brightness, and stumble on our difficulties ere aware of their existence. It is only by looking backwards as we rest, that we see the real dangers we have passed."

Perhaps our friend was right; but if we neglected to examine our chart, and point out in advance to our traveller the stream into which he has tumbled, we will at least atone for the fault by hastening to build the bridge, over which the next on the road may successfully and easily cross.

First, that we may clearly understand the trouble with lawns under the mowing machine, let us remember, that in the vegetable world there is going on a continual "struggle for existence." If there be a dozen plants of a strong and vigorous growing species, growing with a dozen weak and delicate forms, and there is space enough for the perfect development of only one dozen, the weak and delicate ones will be "crowded out," become smothered by their coarse competitors, and are are forced to disappear; but if, as the struggle goes on, "foreign intervention" be at hand, and continually checks the strong, keeping them within a certain compass, beyond which they can go no further, it so much power given to the weak growers; and if the check is continuous and severe, the weak may even get the upper hand, the strong plants succumb, and have to make way for their influence. This is precisely the condition of the lawns referred to. Lawns on which the mower is frequently employed,—and the lawn mowing machine must be frequently applied, for it will not work well in grass over two inches long. — have the coarser grasses in constant check; and numerous small creeping weeds, which could not grow in the darkness that long coarse vegetation entails, get all the light they desire, and flourish with a vigor utterly destructive of a beautiful lawn, leaving nothing in a few months but a mass of small coarse foliage, green enough while the spring rains are falling, but drying away and burning up under the first essay of a July sun. And here, in this case, the little creeping speedwell, *Veronica serpyllifolia*, of botanists, had nearly covered the whole surface, to the exclusion of every thing else. In another case that we noticed, the creeping Sandwort (*Arenaria serpyllifolia*), had claimed and seized the whole green carpet as its own.

The remedy for this evil is obvious. The beauty of the lawn must be sacrificed for one season. The mower may lumber in the shed; the scythesman have a holiday, and the sward suffered to grow as strong as it will, and receive moreover all the encouragement possible in the effort. All the coarser weeds can be drawn out by hand, and nothing but a pure grass sod be left; for nothing could live at the base of such a mass as the uncut grass would form. When the tree leaves fall and the general clearing up season arrives, the dead grass and rubbish can be cleared off together; and with another good clearing up in Spring the lawn will be in condition for the machine for ever after. Perhaps here and there a root of the noxious weeds may escape, and make their appearance in places, when the mower's short cut sward shall so favor; but a little vigilance will detect them and a few hours handweeding per year, will nip all the trouble in the bud.

But the lesson we are teaching leads to another in the first preparation of lawns. Last season we gave reasons why grass intended for lawns should not be cut often the first year of seeding down. Here is a better one—good as they were—and going further than they; for this pleads louldly with us to let the lawn entirely alone the first season. Not only, as in that article we showed, are the roots encouraged to penetrate deeply into the soil when vigorous growth is permitted, thus affording a guard against drought in dry seasons; but all small and

pettifogging trash is cleaned out and destroyed by the luxuriance of the grass itself. The larger weeds are easily pulled out, and thus the foundation of a good lawn of pure grass is laid, which neither scythe nor lawn mower can either affect; nor indeed any thing but the annual dressing of stable manure, with its vile admixture of all kinds of seeds, with which many persons who follow the fashions now persist in ruining their lawns.

CHARACTER OF A GOOD STRAWBERRY.

"CIRCUMSTANCES govern cases," is a trite saying; but one would hardly suppose that the method of culture would ask for peculiar characters, in discussing the question, "What variety of Strawberry shall we plant?" But so it is. There is no question but that growing strawberries in hills, instead of letting them run in beds, will be the rule with all cultivators who are industrious, or have time or capital; and this fact calls for straw mulching to keep the fruit from the dirt. Those varieties like Albany Seedling, Downer's Prolific and others that have their fruit close down in their crowns, on short stalks, interfere with this course somewhat; and those kinds which may have all their good qualities, and long stems in addition, will crowd out of general cultivation the short stemmed ones. Introducers and raisers of new seedlings should bear this fact in mind.

Scraps and Queries.

☞Communications for this department must reach the Editor on or before the 10th of the month.

☞The Editor cannot answer letters for this department privately.

DWARF PEARS—*H. W. D.* writes: "Two years ago I bought five hundred Dwarf Pears, which were set out by my gardener, whom I believe to have been a thoroughly practical man. They are planted so that the place where they are grafted is about an inch above the ground. My present gardener, who comes to me with the strongest recommendations for ability and knowledge, says this is all wrong, and that the point of union should be an inch below the soil. I do not profess to know more than my gardener, who has made his business a study, yet behold how they differ, and what am I to do. I do not know the reason my former gardener had for setting them high, but my present one gives as his reason for wanting them set low, that the Pear will throw out roots of its own, and eventually be on its own roots as it were. But if this is a good reason, will it not defeat the whole object of the dwarf pear, and might I not as well plant standards at once?"

[If the "object" of working Pears on the quince were chiefly to make them *dwarf* there would be force in our correspondent's objections; but the real object is rather to bring the Pear into early bearing. If the Pear, after bearing early through working on the quince, throws out roots of its own, and then achieves the longevity of a standard, so much more is gained. Follow your present gardener's advice, certainly.

PELARGONIUM CUTTINGS—*T. G. B., Fishkill Landing, N. Y.*—Would you, or some of your readers, be kind enough to give me some information respecting the propagation and culture of the Pelargonium. Must they be rooted in clear sand, or what substance is best? Can they be struck in a cold frame; must they have the rays of the sun, or must they be shaded? Any information respecting them will be very gratefully received, as I have been very unsuccessful with them.

—[Our correspondent has probably been too careful with them. Cottage gardeners frequently take half ripened wood, about July or August, nip it off from the parent plant, get an old cracked basin, fill it with common garden soil, stick in the cutting any how, and set the vessel under the shade of a tree, fence or wall, and they usually all grow.

Most gardeners keep the cuttings too closely confined, and they rot for want of sufficiency of air.

We can only give in brief the coarse of treatment best adapted to Pelargonium culture:—As soon as the plant has done flowering, cut it down to about an inch from where the last year's shoots branched, and set the pots out in the full sun—not in too drying a place till the shoots push again about half an inch long—then shake out the old soil, reduce the roots, pot in smaller pots, keep for a few days rather close, then inure to more, and repot as the roots fill, to the desired size of the pot, keeping the plants always near the glass. Use pretty rich loam.

Returning to the cuttings, make them into lengths of about three or four eyes. Set them in sandy place, and they will soon root, when treat as the old plants. They who have our first volume will find an excellent article on Pelargoniums, at page 39, by Mr. W. S. Ward, of West Roxbury, Mass.]

FALL PLANTING OF EVERGREENS—*P.*—It is not well to get Evergreens from a distance for Fall planting. If, as stated in our last is the case about Germantown, you can go to a nursery with a horse

and wagon, have the trees taken up carefully and loaded—taking care that the roots do not get dry before planting, nor hot dry winds evaporate all the moisture from the branches—of such trees transported in August or September, not one in ten thousand will die or do poorly. But if you have to get the plants packed in boxes or bales, and trusted to the vicissitudes of transportation, for some days before planting, you had better defer planting till April next. South of New York planting evergreens in November or later is a risky business. If a few weeks of mild weather follow, and the roots push a little before windy, cold weather follow, they will do pretty well; but in other cases loss ensues.

Removing Large Evergreens—*A Subscriber, Chippewa, Del.*—Is your favorable endorsement in the June number of the modern practice around Germantown of planting Evergreens in August and September, in place of April and May, applicable to the *removing* likewise of larger evergreens, say 20 to 25 feet high?

[Some large evergreens 30 feet high were moved early in October last year in Germantown, and at present appear an entire success. Extra large evergreens have a hard time of it when removed in August, as, the larger the tree, the roots are more proportionately injured,—and so large a mass of evaporating surface, as in the tops of large trees, in a dry and hot August day, must exert a great drain on the mutilated roots. The advantage of August and September planting consists in the fact that the new fibres *push immediately*, often being visible the third day after removal, and no danger of dying by evaporation can occur unless it arises during those few days, which is not the case with evergreens planted in winter or spring, when they often stand weeks before the *roots* grow, the tops losing by evaporation steadily. We make these remarks before answering our correspondent's enquiry directly, that it may be seen there is more risk in moving a large tree in hot weather than there is in smaller ones, that have necessarily more perfect roots. In our correspondent's case we should watch, as early in September as possible, an opportunity for a few days of probable dull weather after planting, to effect their removal.

We may add that in removing large trees, care nothing for a ball of earth, but commence say *ten feet* from the tree, and dig down *two feet* deep. Then with a *digging fork*, loosen the soil away from the roots, and clear out the loose soil from under the mass of roots as it falls. When the trees are set in their new holes, use the driest soil at hand for covering the roots, and tread or beat hard as it is put in about them. Too much soil should not be put in at once; in fact, as many hands should be kept at beating and treading in the soil as there are in filling it in.

We saw some large trees taken up this way about a year ago, probably weighing, without a particle of soil to the roots, from fifteen to eighteen hundred weight each, by a machine similar to those which have several times been described in our pages, and at the very moderate average cost of about five dollars each.

With the discoveries of the few past years, that the rules for planting trees mostly derived from European sources, and heretofore in practice with us, are not adopted to our climate; and, with the results of original observations before us, made in our own country, indicating the proper time and manner of operating on our own trees, the general disinclination of removing trees of moderate size, has undergone a change. We cannot ignore what has been done, and we are forced to the conclusion, that when large trees, say from ten to thirty feet fail in their removal, it is not because they are large, but because the conditions of success have not been well understood. Of course the strongest built ship is liable to accidents at sea, and failure with a large tree will sometimes occur. We speak of success as a rule.

Grapes.—We have three "subscribers" all wanting to know about Grape vines. On turning to the Postmark, we find one hails from Ithaca, N. Y., in the others it is illegible. If our correspondents can find no better signatures than "subscribers," they must not blame us for throwing the answers into one paragraph; and if one acts on the advice intended for another it is no fault of ours.

Hothouse grapes usually begin to stone about four weeks after flowering. Manure water can be applied, if necessary, at any time when the plant is growing freely, without reference to the time of stoning in the grape fruit. Mulching an outside border is a good practice, and may stay on always, without reference to any particular season. Where it is a point to pinch back fruiting shoots of Grape vines, we should do it at the third or fourth bud above the bunch as soon as it could be discerned, without reference to the fact of whether the flowers were expanded are not. It is not considered good practice to syringe freely while the flowers are in blossom; some good growers do, but these are they who admit air freely. Syringing should be governed by the state of moisture in the atmosphere

of ones house. Allow your best shoots space to develope all their leaves fully; but leave on the other leaves, whether they get full light or not.

Beurre Clairgeau Pear on Dwarf—*T. T. S., Dansville, N. Y.*—What is your opinion of the Beurre Clairgeau as a dwarf? Do you succeed well with it as such? My experience is limited, but it seems to have a tendency to fruit earlier than any other kind that I am acquainted with. I think some remarks from you in relation to it would be interesting to many of your readers, as the time of budding is approaching. Some nurserymen do not succeed in making the bud catch very well on the quince, but I never have any trouble.

[Beurre Clairgeau takes very well on quince, but like Gansell's Bergamot and some others, has such a tendency to blow off, through an imperfect union of its spongy wood with the hard wood of the quince, that it is seldom grown that way; and we do not know an instance of a fruiting specimen just now on that stock.]

Budding Grape Vines—*W. C. H., New York.*—In another column we give the experience of a correspondent of the *Rural New-Yorker*, which seems to be satisfactory. We have never known inarching in spring to succeed, but when done in August, on half-ripened shoots, has been very successful. It is quite probable, though it has not we think been tried, that the shoot to be inarched on the stock might have its end in a suspended bottle, as is often done with Camellia and other plants.

St. Louis Botanical Garden.—We are gratified to learn that, in spite of the unfavorable state of the times, this noble work is still progressing. May Mr. Shaw, its generous projector, long live to receive the thanks of the millions of Americans whom his work will benefit in so many ways, directly and indirectly.

Craig's Patent Microscope.—This new instrument, noticed in our advertising columns, commends itself to us by its power and low price. The patent lies probably in the gutta-percha mounting and the great power of the lens. If the inventor could so arrange it that it could be used for dissecting an object while still under the lens, so that botanical students could make use of it in analyzing plant structures, he would confer a great boon on that now increasing class.

Lennig's White Strawberry—*W. R. P., Flushing, L. I., N. Y.*—We have seen the Albion, Freas' White Pine, the White Albany Seedling, and Lennig's White, side by side this year, and in bearing, and can detect no difference in any respect. Lennig's White is the oldest name, and should be the one adopted for general use.

Strawberry, Tatnall's Seedling.—*From E. Tatnall, Junior, Wilmington, Del.*—(There are two E. Tatnalls there). Large berry, on a large stiff truss, and of very good quality. Some resemblance occurs to us between this and Austin Seedling, but we had not a specimen by us to compare at the time, so that we are unable to say whether or not it is superior to that variety.

Flowering of the Crape Myrtle—*L. S. M., West Milton, O.*—How old does the "Crape Myrtle" have to be before it will bloom?

[Usually strong plants bloom the third or fourth year.]

Parsnip Chervil.—We are not aware whether or not this new vegetable already noticed in our columns, is yet in the trade for sale or not, but if so, we would remind our readers that in Europe they sow the seeds in July and August.

Books, Catalogues, &c.

Proceedings of the Academy of Natural Sciences, of Philadelphia, for April.

Dr. Asa Gray contributes an article reviewing Mr. Buckley's paper on "New Texan Plants," in which he points out several errors into which the latter botanist has fallen in renaming plants already described. In reference to those which we have noticed in this paper, Dr. Gray says the Grapes: *Vitis monticola*, is but V. rupestris of *Scheele*. *Vitis Linsecomii* is but a form of V. labrusca. *Vitis Mustangensis* is not the Mustang Grape of Florida, but is the same as V. candicans of *Engelmann*. Mr. Buckley's "Fraxinus oblongocarpa" Dr. Gray says is nothing but a form of F. pubescens. "F. nigrescens" is F. platycarpa. "F. trialata" is a small leaved and smalled fruited form of F. viridis.

The "Morus microphylla" of Buckley, also noticed in the *Monthly*, Dr. Gray thinks is a good species, and this name, published for the first time, will probably be adopted.

Dr. Gray must have bestowed much valuable time on these researches, and he deserves the thanks

of all interested in plants, for his successful endeavor to prevent the trouble and confusion which we are all put to, by the multiplication of synonyms that the too hasty descriptions of supposed new plants leads to.

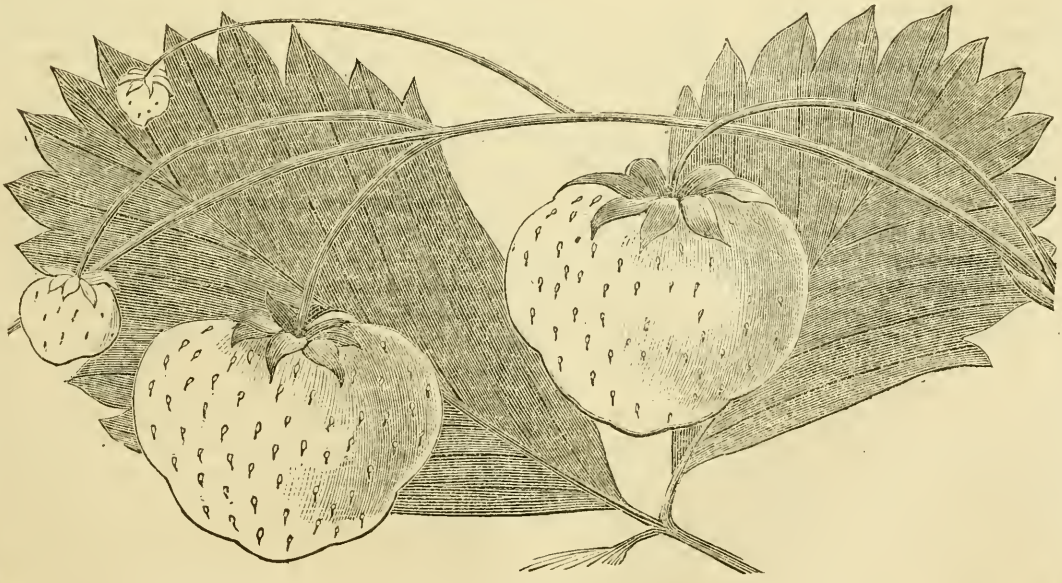
The Atlantic Monthly, for June, has a continuation of Dr. Agazziz paper on the "Methods of Study in Natural History," which, independent of the other highly entertaining and instructive essays, will possess a rare interest to most of our readers.

The Scientific American, Munn & Co., New York, Publishers.—We notice that the new volume is about to commence, and take the opportunity to say that it is one of the most welcome of all our exchanges. Just now, while the inventive mind of the nation, which this magazine represents, is so absorbed in discoveries in the art of war, the more peaceful pursuits of horticulture do not offer such great inducements for mental activity; but mechanic art in all its diversity bears more usefully on the horticultural than on any other profession, and such papers as the *Scientific American* are almost indispensable to him who would study the whole art of gardening to perfection.

Rare and New Fruits.

Foreign Grape—*Lady Downe's Seedling.*—At a meeting of the London Horticultural Society, May 6th, Mr. Thomson, gardener to his Grace the Duke of Buccleuch, again sent a bunch of Lady Downe's Grape, merely to show what like Grapes were that had hung from the autumn and through the Winter and Spring till May. From the old wood young shoots had begun to appear; the rising sap had flowed equally into the bunches as into the young shoots, and burst the berries, which in consequence had mostly become mouldy; there were some, however, that had resisted the force of the sap, and these were quite sound and excellent in flavor.

New Strawberry—*Kohl's Abington Blush.*—This, which we engraved from a specimen exhibited before the Pennsylvania Horticultural Society, we regard as the handsomest white strawberry we have seen. All the others we know have a slight tinge of pink—in this one the coloring is crimson. In size and flavor it is equal to any other of its class, to say the least; but should it not be found better than any other we have on more extended trial, its distinctiveness and beauty will give it a place in general collections.



The Yeddo Grape of Japan, which has before been noticed in the *Gardener's Monthly*, an English writer says is of a grizzly color, resembling, and equal in quality to the Grizzly Frontignan. This is a high character.

Domestic Intelligence.

Hovey's Seedling Strawberry.—At the magnificent exhibition of Strawberries before the June meeting of the Pennsylvania Horticultural Society, no one variety attracted more attention than the plate of Hovey's Seedling, exhibited by Mr. Harmar. Taking beauty, size, and excellence together, they were not surpassed by any of its more modern competitors. In size alone, or quality alone, others beat it. Trollope's Victoria, that gained the premium, for instance, though superior in flavor, and equal in size, had none of that real strawberry color, which gave the Hovey its great charm. It is remarkable that so old a strawberry should stand its ground so well.

Plowing Orchards.—In the spring of 1853, I purchased a village lot on which were a few fine apple trees, some of them six or eight inches in diameter. The ground had not been very well cultivated for a few years, yet the trees were healthy and productive. Wishing to make them grow rapidly, and produce more abundantly, I spaded the ground under them thoroughly and very carefully. They bore well that year. The next spring I again tried spade culture, but I noticed that the earth under the trees was literally bound together by fine rootlets, and that a great number of them were broken at every shovelful that I turned up. I begin to reflect on the utility of these fibres roots. I thought them analogous to the minute veins, absorbants, and capillaries of the human system, every one of which conveyed a certain portion of nutriment to the body, or to some organ of it; hence I concluded that the process of constant cultivation must be injurious.

My fears were realized. In 1855, two of the best trees died; a great many trees died that year in various parts of the country, and the cause was attributed to the weather. I have no doubt that a severe winter hastened the decay, but in this region, the best cultivated orchards were most severely injured. I can mention many instances in further proof of my position, if necessary, but defer it for the present.—*New England Farmer.*

Peaches in Southern Illinois.—Two men at Makanda Station, from their peach orchard of 4000 trees, shipped 12,000 half bushel boxes, which netted them over $12,000. This was the first crop from this orchard, but it shows what can be done in "Egypt." There has not been an entire failure of the peach crop here during the last twenty years, and there are seedling trees here thirty years old, still bearing bountiful crops. The winter of 1855–6, which killed to the ground nearly all the peaches in Northern Illinois, did no damage here, further than killing a portion of the buds.—*Country Gentleman.*

The Bite of Poisonous Reptiles.—The Algalia plant was first discovered in Guatemala and brought into notice in the year 1802. It is nearly allied to the cotton plant, and to the ochra of South Carolina, which latter it resembles in many respects. Like these, it is an annual plant, growing to the height of five or six feet, flowering in September, and ripening its seed in the month of November. The seed has a peculiar musky smell, like that emitted by snakes, none of whom are, it is said, to be found in its vicinity.

It is considered there to be a certain remedy for the bite or sting of any poisonous reptile whatever, taken inwardy as speedily as possible after the bite, reduced to a powder, and infused for a short time in water or wine, applying the sediment in the form of a poultice to the wound. The hunters or country people are never without a portion of the seed, which they chew into a paste, on being bitten, swallowing the liquid part and applying the paste over the bite.

The Profits of Fruit Growing.—There is no question but fruit growing has been a source of great profit to farmers of Western New York within the last fifteen years, and strange as it may seem, the business improves as the number of growers increases. An instance of the advantage of fruit growing is related by the Orleans American. A lady in the town of Gaines, bought, eight years ago, eight acres of old, worn-out land, at less than $40 per acre, cropped it two years, then, in November, six years last November, set it out to orchard, at an expense of less than $200, over and above expenses. She recently declined an offer of $2,500 for the field—will not sell for less than $3,000. There is no building or other improvement on the land except those mentioned.—*Rochester Union and Adv.*

Catawba Brandy.—Dr. Ilsley, of the *Evening Courier*, in speaking of the effects of this article,

says: "It is a curious physiological fact, well known to the residents of the West, but of which the general reader may be ignorant, that the habitual drinking of Catawba brandy has an invariable tendency to induce insanity or idiotcy. It often happens, neither lunacy nor idiotcy succeeds the drinking of Catawba; but the patient is rendered irascible, self-willed, opinionated, boastful, conjoined to mental imbecility, which renders him about as uncomfortable a companion as a man well can be."

Budding the Grape.—Last August (1861) I was pruning my grape vines a little, finished, and stood thinking about vines. The thought of inoculation came up. I obtained a branch of Diana, and put two buds carefully into a vigorous Isabella. One of them is now growing nicely, about six inches in length. Some grape growers laughed at me last fall, but they give it up now. It strikes me that inoculation is better than grafting.—*Cor. of Rural New Yorker.*

Exhibition of Strawberries in New York.—This exhibition, which has been some time spoken of, came off in the second week in June, at the office of the *American Agriculturist.* There were 135 varieties from 30 growers, which looked as little like the wild strawberry of the pasture from which they were all developed, as the finest Pippin or Rhode Island Greening like the crab apple. The identity of the original berry was lost in the vastly increased bulk and the altered shape of the cultivated fruit. The color was the only remaining general resemblance, and that was not always preserved, for some of the trained berries were almost black, while others were a waxy white. The finest and largest of all—incontestibly the King of Strawberries—is the deep red and purple, shining, double-lobed, Triomphe de Gand. Three specimens of this imperial berry at the exhibition yesterday weighed 3½ ounces. Wilson's Seedling (growing 300 bushels to the acre) and Ward's Seedling, were among the largest and best of the market berries. The Black Prince was the darkest variety, and but little inferior in size to those already named. The Madame Loresse, Deptford White, Lennig's White, and the Little Alpine were the principal pale varieties. They may be just as sweet and juicy as the red strawberries, but it is their misfortune not to look so. There was a plate full of great fat bright red berries, for which the owner solicits a name. Such a handsome fruit is worthy of a good one, and we would suggest McClellan, if that name is not already appropriated by one of the strawberry tribe. Other berries that should be honorably mentioned, were the Delice d'Automne, Hooker's, Vicomtesse Hericart de Thury, Prince's Diadem, Prince's Climax, Early Scarlet, Boyden's Mammoth, British Queen, Fragrant Scarlet, Longworth's Prolific, Trollope's Victoria, Austin's Shaker, Sir Harry, and Duchesse. The following were the principal premiums awarded:

For best collection, $10 to E. & G. Marshall, of Poughkeepsie; second best, $5 to Mr. Heins, of Woodstock, Westchester county; best dish of market berries, $5, Wilson's Seedling, E. & G. Marshall; best for general family cultivation, $5, Triomphe de Gand, Mr. Fuller, Brooklyn; second best do. $3, Ward's Seedling, W. H. Goldsmith; third best do. $2, Longworth's Prolific, William Shaw, Staten Island; best three largest, $3, Triomphe de Gand, Mr. Heins, Westchester county; best new seedling, $3, Mr. Fuller, Brooklyn; second best do. $2, W. A. Burgess, Glen Cove.

To Destroy the Currant Worm.—Col. Cuyler's, of Cuylerville, plan is to make a smudge by burning small pieces of leather in a tin pan, to which a handle is attached. Over this he throws sulphur occasionally, of course placing the pan under the bushes attacked by the insects. This causes all to drop. This process of course must be repeated as often as a new crop appears, and a little care must be exercised not to burn the leaves.—*R. N. Yorker.*

Quinces for the Tea Table.—Bake ripe quinces thoroughly, and when cold strip off the skins, place them in a glass dish and sprinkle them with white sugar and serve them with cream. They make a fine looking dish for the tea table, and a more luscious and inexpensive one than the same fruit made into sweetmeats.

Sarracenia purpurea for Small Pox.—This is our native "Pitcher Plant," and is said to be a remedy for Small Pox in alls its forms in twelve hours after the patient has taken the medicine. That "however alarming and numerous the eruptions, or confluent and frightful they may be, the peculiar action of the medicine is such that very seldom is a scar left to tell the story of the disease." If either vaccine or variolous matter is washed with the infusion of the Sarracenia, they are deprived of their contagious properties. So mild is the medicine to the taste, that it may be largely mixed with tea and coffee, and given to connoisseurs in these beverages to drink without being aware of their admixture. The medicine has been successfully tried

in the hospitals of Nova Scotia, and its use will be continued.

Mr. Hogg's Visit to Japan.—By recent advices from California, we learn that this gentleman, whose mission to Japan we recorded in the *Monthly* last fall, spent a few days in Sacramento last month, and has since sailed for Japan, in good health and spirits.

Prices of Sundry Fruit and Vegetables in Philadelphia, for the week ending, June 14th: Cherries, 6 to 10 cents per lb.; Beets, 5 to 7 cents per bunch, (about 5 in bunch;) Bermuda Potatoes, 31 to 40 cents half peck; Peas, 10 to 12 cents per half peck.

Pears for Sandy Soils in Michigan.—The Buffum is the only standard pear with which I am acquainted that succeeds well on sandy soil, being of better quality than when grown on heavier soils. —B. J. Harvey, Adrian, Mich., in *Country Gent.*

Profitable Apples for Illinois.—A *Prairie Farmer* correspondent names, Winesap, Jonathan, Rawle's Janet, Willow Twig, New York Pippin of Verry Aldrich, and Ben Davis of Downing. For Fall—Fameuse, Fall Winesap, Duchess of Oldenberg, and Fall Orange. For Early—Carolina, Red June, Red Astrachan, Sweet June, Keswick Codlin, and Yellow June (this is the Kirkbridge White of Indiana).

List of Premiums Awarded by the Brooklyn Horticultural Society, at their Annual Exhibition, held June 18th and 19th, 1862.

Plants in Pots.

Best miscellaneous collection of greenhouse plants, Mrs. John Humphries.

Best single specimen plant in bloom, G. A. Messeberg.

Best 4 Gloxinias, Philip Zeh, gardener to A. A. Low.

Best 6 Fuchsias, in variety, G. A. Messeberg.

Best 3 do do do do

Best 2 Orchids, Isaac Buchanan.

Best single Orchid, Isaac Buchanan.

Best 6 Pelargoniums, David Fowler, gardener to E. Hoyt.

Best specimens, Double Petunias, John Cadness.

Cut Flowers.

Best miscellaneous collection, G. A. Messeberg.

Best collection of Roses, Dailledouze & Zeller.

Best 12 Hybrid Perpetuals, A. G. Burgess, East New York.

Best 12 Moss and otner annual Roses, P. Brunner.

Best 12 Tea, Bourbon, and Noisette Roses, Dailleonse & Zeller.

Best 6 Roses, in variety, P. Brunner.

Best 6 Herbaceous Pæonies, James Weir.

Baskets and Bouquets.

Best Miscellaneous Basket of Flowers, P. Zeh.

Best Formal Table or Parlor Bouquet, J. Weir.

Best Miscellaneous Bouquet, James Weir.

Fruits.

Best 2 Bunches of Black Hothouse Grapes, E. & G. Marshall, Poughkeepsie, N. Y.

Best 2 Bunches of White Grapes, James Bogie, gardener to J. C. Henderson,

Best 3 Dishes of Strawberries, in variety, Francis Brill, Newark, N. J.

Best 2 Dishes, Francis Brill.

Best Single Dish, G. M. Sibbell.

Best Dish of Cherries, John Young.

Special Premiums Offered

By A. S. Fuller, $5, best quart Strawberries, to A. S. Fuller.

A. S. Fuller, $10, best Seedling Strawberry, Francis Brill.

J. W. Degraw, $10, best Collection, not less than 20 varieties, one pint each, E. & G. Marshall.

R. W. Ropes, $5, best Collection, not less than 12 varieties, A. S. Fuller.

John Williamson, $5, best 2 quarts Strawberries in color, E. & G. Marshall.

W. R. Anthony, $5, best Hanging-basket of Plants, A. C. Chamberlain.

W. Napier, $5, best Collection of Herbaceous Plants, not less than 20, A. S. Fuller.

C. H. Van Wagener, $3, best and most tastefully arranged Basket or Bouquet of Garden Flowers, by an amateur, Mrs. R. R. Hong.

The Committee recommended special premium to Wm. J. Reddy, gardener to Mrs. W. S. Packer, for a single specimen Oranges and Lemons growing and fruited on the same tree.

Also, that a special premium be awarded to A. C. Chamberlain, for his Hanging Baskets of Ornamental Flowers and Fruit.

Special Premium of $3 for a splendid specimen of the Scotch Thistle to Mrs. Henderson, Brooklyn,

Do $5 to Parsons & Co., for Hardy Trees in Pots.

Do $3 for 6 Variegated Fuschias of great beauty to Mrs. John Humphries.

Do $3 for a Lilium giganteum, to John Cadness.

Do $5 for a Pyramid of Cut Flowers, Thomas Cavanaugh.

Do $10 for Plants grown in Baskets of Moss, A. C. Chamberlain.

Do $3 for a Basket of Wild Flowers, Mrs. John Humphries.

Do $3 for 20 Varieties of Gloxinias, to Andrew Bridgeman.

Judges on Fruit,—C. W. Grant, P. T. Quinn, Wm. T. Heins.

Judges on Flowers,—Peter Henderson, Thomas Duncan, Wm. Elliott.

[We have received the above since our regular column closed, and insert the first premiums here, as the community will be anxious to learn the result of what promised, and we hear has proved to be one of the best exhibitions held for some time in this country. The report would have been of double interest had the names of the winning plants and fruits been given.—Ed.]

Strawberries and Cherries in Sacramento.—The May Duke Cherries from Smith's Gardens were selling last week at Sacramento at $1 a pound, Strawberries at 50 cents a pound.—*California Farmer*, May 30th.

Foreign Intelligence.

The Trebiana Grape. — As this grape has been successfully shown this season at some of the principal fruit exhibitions in London, perhaps a few hints respecting its culture and history may be of interest. When I first came to Welbeck, the late Mr. Mearns had introduced it there from some garden in Wales; and, from his having grown it at Shobden Court, he pointed it out to me as a desirable variety of white grape for keeping late. At first I thought it only the Syrian, but after having grown it for a great many years, I find it perfectly distinct, and one of the most valuable white grapes grown for keeping late. It is a grape that does best with stove heat, like the Muscat of Alexandria, and if grown with it in the same house it will keep the succession of white grapes up till the last. The Trebiana forms a noble and well-shouldered bunch, the berries being large and setting well, and is constitutionally a strong grower, making a famous stock for grafting others on. The Muscat of Alexandria can seldom be kept in good condition after the end of January; but the Trebiana, under the same circumstances, will keep quite plump till the end of March. Like the Muscat, it keeps all the better for being well ripened in August or September; and shows a beautiful amber tint in the berries when ripened early. With the Black Barbarossa, Trebiana, West's St. Peter's, and Lady Downe's Seedling, there is now no difficulty in having good late grapes till the early grapes are ripe, and so having a succession all the year round. The unnatural system of forcing early grapes, so as to have them ripe in the winter months—say in January and February—can only be carried out for a year or two in the same house, through the vines getting so weak from the want of a proper winter rest. In March, April, and May the case is different; for good early grapes can be ripened in pots or tubs, or in vineries where the roots are protected, and the wood will not suffer from too early forcing.

I find that the old White Muscadine is an excellent grape for keeping late; for though it gets shrivelled a little in February and March, it is quite fit for the dessert, and has a delicious flavor peculiar to itself.

I have crossed the Trebiana with several of our high-flavored white grapes, such as the Chasselas Musqué and White Frontignan, and have some promising seedlings which I expect to fruit next year. Seedling grapes must now be very good indeed to beat the new varieties already in cultivation; but my object in crossing with the Trebiana is to try and get good flavor of grapes combined with good keeping qualities.—Wm. Tillery, Welbeck Gardens.

[Through the kindness of Mr. Tillery, the writer received some cuttings of the Trebiana grape some years ago, which were placed in the hands of a distinguished grape grower here, who reported that they were identical with Syrian. We extract the above letter of Mr. Tillery from an English journal in order to call attention to it again by those who may still have it in cultivation.—Ed.]

New Leaf Plant.—*Amorphophallus Wallasii.*—In a recent number of the *Gartenflora*, edited by M. Regel, the Curator of the St. Petersburg Botanic Garden, we find a figure of this, from which it would appear to be one of the most beautiful leaf plants yet discovered. As M. Regel himself says, "the foliage bears the elements of rare beauty." The "principal nerves are followed by lines of silver, that contrast very agreeably with the deep sombre green of the leaves." It is a native of Brazil. Mr. R. is not prepared to assert positively that it is distinct from Caladium, but believing it is, he gives it this as a provisional name.

Tree Mignonette.—A few seeds of the large-flowered Mignonette should be sown, and the pot

should be kept in a window till the young plants appear. Very little watering is sufficient at first, and a little moss or a piece of paper is a sufficient shade till the seeds have sprouted, just by way of preventing the necessity of much watering. A north window, or still better one north-east or north-west, is the best place for the seedlings during the summer months. They must be thinned out at once to three, and after a week or two only one should be left. A little earthing up is extremely useful, as the young plants seem somehow apt to get twisted round. As soon as one stem is tall enough to require tying, it should be fastened loosely to the stick awaiting it. And from the first every appearance of flower buds should be at once cut out with a pair of sharp-pointed scissors. The little side branches also should be stopped, that is pinched at the point, as soon as they begin to make a second pair of leaves. And after three or four months the little shortened branches may be themselves by degrees cut off. The leaves, however, are rather precious at first, as helping greatly to advance the growth and to feed the plant.

On a summer's evening the plants may be watered thoroughly over head with a fine rose or syringe, and if preserved from frost or damp and kept in a light place, they will begin to be shrubby by next spring, when perhaps one or two might be let begin to flower. They last for many years when once well trained, and are very useful from their winter flowering.—*London Gardener's Chronicle.*

Marsh Gas.—M. Boussingault, as stated in *Comptes Rendus*, has discovered that under the influence of direct sunlight the leaves of aquatic plants give off a notable proportion of carbonic oxide and carburetted hydrogen. He thinks that this emanation of carbonic oxide may be one of the causes of the unhealthiness of marshy districts.

Cut Flowers for Room Decorations.—Last year the London Horticultural Society offered premiums for the most tastefully arranged decorations for the dinner table. We gave in the *Gardener's Monthly* an engraving of the design to which the premium was awarded. This season similar premiums were offered for drawing-room ornaments, and the result is thus described by a correspondent of the London *Gardener's Chronicle.*

Last year the prizes were given for groups for the dinner table; this year they were for the drawing-room, and consequently of a different style. They were shown in a variety of ways; there were wicker-work tables, glass baskets, fancy glass ornaments of many shapes and sizes, besides two or three masses of flowers, closely packed and elaborately arranged, with the spaces all stuffed so full of moss that it was impossible to say what the stands were made of; they may have been glass, bronze, wicker-work, or wire for all I know, no portion of the support being allowed to be visible; for my own part I think they were glued together. Fortunately, there were but two or three of this style, which I had hoped had perished with last year. I wish you could have seen one peculiar looking vase, rather quaint in its way; its form was that of a slender urn, made of clear white glass, with funny little projections coming out of its body, into which single flowers are stuck, each surrounded by a piece of variegated grass, tied in a bow, so that the whole formed an even row of little bows all around the vase, while a small bouquet finished it off at the top. I am not sure, however, that I have described it quite correctly, for there was such a crowd of persons round the table it was almost impossible to get a good view. Of all the baskets, and indeed of all the exhibition, the one I liked best was a white glass basket, of a very pretty flattish form, dressed with Lilies of the Valley, white Lilac, and white Narcissus, relieved by the introduction of a few Fern leaves and some Moss, while a Lycopodium crept partly round the handle. There was nothing but green and white, most tastefully arranged, and the effect was charming. Several other glass baskets were more or less pretty, but none came up to the one described. I remarked how very prevalent the use of Adiantum has become; almost every vase had some; and though, when skillfully introduced, there is nothing to compare with it, still in some cases I thought it looked out of place, and quite failed in producing the desired effect. Another vase struck me as remarkably pretty; that also was of white glass (but I think opaque) mounted on a gilt foot, either hung with little gold chains or ornamented with light fret-work, which gave it that appearance: I am not sure there were not three small vases forming one on the same stand; in this the flowers were nicely arranged and the general effect pleasing.

In conclusion, let me mention several small, elegant, clear white glass ornaments, some with branches and some without; their chief charm consists in looking bright and taking very few flowers and very little trouble to arrange; singly, or on the exhibition table, they looked insignificant, but I dare say, away from the collection, and placed on side tables in a fashionable drawing-room, they would be very ornamental.

How to Construct Ponds.—In the construction of ponds, there are many different modes of keeping in the water. The most objectionable and expensive is lead; yet it is very commonly used in limited structures. The nature of the ground must in some measure determine. If it be open and porous, nothing will be more durable than puddling, which is nothing more or less than lining it with very stiff clay, and of a good thickness; for if it be not thick, it will give way, and the water will all escape. Supposing it to be, as we have said porous, dig it out three feet six inches deep in the middle, and gradually becoming shallower as it approaches the edge, which should be eighteen inches deep; stiff clay as it is dug, moist, but not wet, should be thrown in, in sufficient quantity to make a good thick stratum all over the bottom. This has to be rammed down with wooden rammers, made with straight round pieces of timber, as thick as four inches through, rather rounded at the bottom, and cut so as to handle well at the upper end; and several hands ought to be employed at this ramming, occasionally wetting it when it is not sufficiently moist, and keeping a pail of water to dip the rammer into to prevent it sticking. In this way you cover the bottom with well-wrought malleable clay. Continue adding to this, and ramming it in, until you have covered the bottom a foot thick all over, which will make the middle two feet six inches deep, and the edge come off to nothing; for the clay must be brought up to the edge of the intended water, the level of which must be preserved by a drain close to the top, or a pipe, through which superfluous water may run off. It is almost impossible to work the clay too much by the ramming process; for if the pores be not closed well, the water will find its way through. As soon as it has been rammed sufficiently, and smoothed pretty well, it may be left to dry; and if the clay be worked enough, it will dry without cracking. If, however, there should be a disposition to crack, which will be seen before it has dried much, it will be necessary to ram it still more all over; and the second time you must trust it only a day or two, and before it has shrunk, let in the water.

Prices of some of the New Plants in England.—*Thujopsis dolabrata variegata*, $16; *Retinospora obtusa*, $5; R. pisifera, $5; Sciadopitys verticellata, one foot high, $50; Eurya latifolia, $8; most of the new Ferns range from $5 to $10 each; a new Caladium, *C. Vietchii*, is also advertised at $50 each.

Camellias at the London Exhibition.—The *Cottage Gardener* says:—Unquestionably the finest Camellia there, in shape, was Sarah Frost, an American variety, sent by Mr. Standish. It was absolute perfection, laid out most regularly, and a delicate rose color with white stripes. Duchesse de Berri, too, was another exquisite in shape, and a and a beautiful clear white. Then there was Mæsta Rosea, very fine; and Montaroni, a large and good white. These all were fine plants, sent by Mr. Standish. Queen of the Beauties is said to be the finest striped Camellia out, and has been introduced by Mr. Bull, from Belgium.

Cherries in Orchard Houses.—I am a great lover of birds and also of cherries; but, in the last-mentioned love item, the birds beat me hollow, for I seldom or never see one ripe on my standard trees in the open air, and if I protect my dwarf bushes with nets, the blackbirds and missal thrushes tear them open with their strong claws, and chatter defiance when I approach them. I began quite to yearn for ripe cherries and to cast about how I should procure them, when the orchard-house culture of them occurred to me. I therefore consulted our oracle, and built a small span-roofed house, 25 feet by 14, 9 feet high to the ridge, and 5 feet high at sides. As it is not in an ornamental part of my garden, I had the sides and ends made of ¾-inch boards, with a shutter on hinges a foot wide on each side. I made a path 3 feet wide along the centre, and planted on each side of it a row of nice pyramids of the compact-growing varieties, such as the May Duke, Archduke, Duchess de Palluau, Empress Eugenie, Reine Hortense, Nouvelle Royale, Royal Duke, and Coe's Carnation, all budded on the Mahaleb stock and planted about 2 feet 3 inches apart. Behind them, next to the sides, I placed some low pyramids and bushes of the Biggarreau and Heart Cherries budded on the the common Cherry stock; and, as these cherries are all vigorous growers when planted out; I had them potted in 13-inch pots in some light sandy loam and manure from an old hotbed, two-thirds of the former to one of the latter, well rammed down, so that the surface of the earth was quite hard. On this hard surface I placed in March some manure 2 inches thick. My success last summer (1861) was quite refreshing, for the very few cherries on my trees in the open air were quickly despatched by my singing friends, the blackbirds and thrushes; but my house full of fine ripe fruit was effectually "tabooed" in this way. As soon as my cherries began to color—*i.e.*, when boys gobble them down

declaring they are ripe—I had the shutters opened and some iron wire netting, with meshes about an inch in diameter, placed over the apertures occupied by the shutters when closed. This was nailed firmly inside to the sides of the house, so as to effectually to resist the fingers of boys and the claws of birds. By placing it inside, it does not hinder the shutters being closed when the house requires fumigation, which with cherries, so liable as they are to be infested with black aphis, is frequently necessary. This is one of the reasons why I recommend cherries to be cultivated in small houses appropriated to them only, rather than in large houses with other orchard-house trees. Another reason is, that they require less syringing than peaches and nectarines, for a thorough syringing once a week before 8 A.M. during the growing season will keep the leaves and fruit free from dust, and as soon as the latter commences to color this may be discontinued, or the large and fine sorts, such as the Elton, Bigarreau, and others, are apt to crack. Cherries while ripening delight in a dry warm atmosphere, such as they rarely have in England in the open air, but which in an orchard-house exists in perfection.

In the commencement of this article, I have tamed such compact-growing sorts as may be cultitivated as pyramids and planted out on each side of the central path. I will now point out some varieties which succeed best when grafted on the common cherry stock, and which are of too vigorous habits to be planted out in a small house, but which may be cultivated with great success in 13-inch pots.

The most select of this class are the Elton, Downton, Bigarreau, Black Tartarian, Belle d'Orleans, Early Purple Guigne, Florence, Knight's Early Black, Bigarreau Napoleon, Governor Wood an American sort, and some of the French Guigne cherries which do not succeed well in the open air in England, such as the Guigne Grosse Noire, Guigne Grosse Rouge, Guigne Rouge Tardive, Guigne Marbrée Précoce, Guigne Marguéte, and some others. The Late Duke and Morello should not be omitted, for if kept from wasps by the trees being enclosed in bags of tiffany, they may be had in perfection till late in October.

All cherries under glass, whether planted out or in pots, must be under one system of pruning or rather pinching, for as soon as a young shoot has made five or six leaves, its top should be pinched off to three full-sized leaves, not counting two or three at the base, which are generally small and without buds in their axils. This pinching process must be continued all through the summer till the trees cease to make young shoots. My cherries commenced to ripen last year (1861) something in the following order:—The Empress Eugenie was the first to show color, followed closely by May Duke; but the first that ripened were the Early Purple Guigne and Belle de Orleans, and this was the first week in June, or thereabouts. The latter kind is remarkable for its sweetness; but it is not so piquant as the former. Empress Eugenie is much like the May Duke, not quite so rich, but from its ripening 8 or 10 days before it, it is valuable, and it bears abundantly. Among early kinds Knight's Early Black takes a high rank, and that very old and rather acid cherry, the Early May, is really worthy of a pot, for it ripens very early, and in a sunny season in May, thus doing justice to its name. The Elton is remarkable for its fertility, and the richness of its flavor when grown under glass; and the Florence, with its very firm flesh in August, is excellent. I need not, however, particularize any further, for, as far as my experience has gone, all cherries, when well ripened, are most agreeable. The great satisfaction a cherry-house gives is the certainty of your fruit being safe from boys and birds; and I felt pleasure last year when, towards the last week in May, I saw my trees full of fruit, just showing their cherry summer reminding tints, put a padlock on the door and put the key in my pocket, only to be delivered occasionally to a trusty man, who gave the trees water when they required it. My cherry-eating visits to my house continued to September, and it was really a pleasure—although a small one—to watch the progress of my trees, to taste the different varieties, and to take notes as to their periods of ripening and their qualities. As small pleasures help to brighten the path of life, allow me to advise some of your readers to build a cherry-house, and try and find one most agreeable source of satisfaction.—CERASUS, in *London Florist*.

LONDON HORTICULTURAL SOCIETY'S GARDENS.—Our people, while pondering over the ignorance and jobbery prevailing in their own state of society, forget the fact that these evils prevail to as great an extent under the old order of things as in ours. Most, probably greater, as there is not the same chance of exposure as under our free system. The following remarks on the New London Gardens, we clip from an English paper:—

"We are in great fear, more fear than doubt, that a good deal of the most costly work in the gardens will have to be done away with and removed. Some of the shrubs and trees appear to be in a de-

cline; but they will of course be put out of sight as fast as they die. To be serious, the fruits of jobbery are ripening fast, and, if we mistake not, there is a good crop. The people who fancy they can build gardens as they do houses, and produce effect by collecting materials for immediate appearance as architects order bricks, mortar, and stone, and forget the conditions that trees and shrubs require, often make great mistakes, and some here are upon a gigantic scale.

Foreign Correspondence.

NOTES UPON THE HORTICULTURE OF SCOTLAND IN THE YEAR 1861.

BY E.

NO. V.

EDINBURGH is literally a city of gardens, both internally and externally, for three miles around; with natural rockwork in the Castle, Caltonhill and Salisbury Crags; and mounds in Corstorphinehill, Arthur's Seat and Libberton Heights; lawns and pleasure grounds in Lochrin Links, Leith Links; Argyle Park, (the Meadows), the King's Park; a river in the Frith of Forth, a lake in the North Sea. The views from the rockwork and mounds are unsurpassed; that from Corstorphine Hill is famous in song—"Seven counties around you see." The hills of Perth on the north, the Pentlands on the south, Wemyss' Castle on the East, and Sterling Castle on the west. Princesses street gardens are nearly a mile long and a quarter mile broad; Queen Street gardens, four squares long and one square broad; Holyrood gardens, a mile long and half a mile broad, with fish pond and broad belts of trees around.

There are many gardens the size of our public squares, called squares, crescents, places, &c. The following are a few of them: of squares, Charlotte, St. Andrew's, Gayfield, Melville, James, George, Argyle, Brown; of crescents, Coate, Athol, Gardener's, Randolph, St. Bernerd, Claremont, Warriston, Hillside of Places, Drummond, Moray, Ainglie, Saxe Coburg, Bellevue and Royal Circus; Dean Terrace, &c. Very few of these gardens have tall trees; they are in grass with gravel walks, enlivened with numerous flower-beds and groups of shrubbery, and belted with evergreen shrubbery, so that those inside cannot be seen from outside. They are kept in splendid style,—Crocus, Hyacinth, Tulip, Narcissus and other bulbs are grown in thousands, which give early blooms; and summer and fall flowers follow in abundance; but the disorderly do not get in or they would not be such gardens; they would be as much out of place there as thistles among wheat and cockle among barley.

Harriot's Hospital, in the heart of the city, has many acres of pleasure grounds, so have all the schools in and around the city. Many of the streets for half a mile in the city, have front gardens fifty feet deep, and all the houses being double fronts, make a fine display. So it is with Newington, two miles long to the Gilmerton road, Dalkeith road near to Gray toll, a mile; with many streets between them, likewise the Morningside road from Lochrin, nearly to morningside, a mile and a half, with many branching new streets between that and the Colington road. The Grange Loan, a mile and a half long, is all the way lined with privet cottages, and a new street is made of the same length and runs parallel with it, is almost wholly built up, with gardens twenty-four and thirty yards wide and a square long. The architectural beauty of the building here surpass any row of suburban cottages around the city; and the gardens are all that skill and fine taste can make them. Where there is an empty lot to let upon ground rent, tickets are up saying *Grounds to Feu.* Inverlieth row is a mile long, lined on both sides with cottage and gardens, so is Corstorphine road, two miles long. Locksterick road, from Jockslodge to Leithlinks, is also clothed with suburban gardens; so is the Bonnington road and Pilrig Street road to Newhaven. Coates and St. Bernerds, Crescents, have both large Elm trees, and numerous crows build their nests there, and no one disturbs them. Birds are all over the city, and make their nests in the gardens. As I passed along St. Bernerd's Crescent one day, a gentleman stepped out of his door and threw a handful of oats upon the street, and a large flock of birds alighted and picked them up as tamely as domestic fowls; and although persons of both sexes and all ages were passing, no one frightened the birds, (when will our people adopt such a laudable practice). Herbiverous insects are scarce.

Portobello, upon the edge of the sea, two miles out, is a large city wholly of cottages and large gardens; and many fine places are upon the wayside between that and the city. All the land lying between Edinburg, Leith and New Haven, not taken up with private residences, are in market gardens and Nurseries, and twenty pounds per acre per annum of rent is paid for them.

One day as I went down the Bonnington Road, both it and Pilrig Road were clothed with carts loaded with sea-weed for the market gardens. The

great storm and high tide upon the 19th of September strewed the beach with it from Leith to Portobello, and hundreds were gathering it into heaps while carts were hauling it away. Upon inquiring into its effects, I was told that the crops immediately following its application to the lands, were most luxuriant, and its effects were greatest if spread over the ground at once, and dug in; or got a heavy rain upon it to wash the saltiness into the soil, and but few weeds appeared after its use, and no insects; but its strength is gone in one year. The great crops following its use do not reduce the fertility of the soil, for it is in better tilth after them than before the sea-weed was applied. There! said I, is the beneficial effects of salt as a manure if we only knew how much to apply; it is not a stimulant, but a positive fertilizer; it appears to quicken the inorganic matters in soils, and make them instrumental in giving thrift to crops. Cabbages and turnips do not succeed so well after sea-weed as other crops; when they get to a certain age they get thick rooted, what we call club-footed, and is called finger-and-toe disease in Scotland; when that takes place, the enlargement of the plants ceases and they gradually go to decay.

The nurseries, generally speaking, are kept in admirable style; the perfection of their arrangements, the tasteful order and clean state of them, with the heads of departments keeping their places for life, makes one think that mistakes could not happen accidentally. Nothing can surpass the precision and regularity practiced in the establishments of Dickson & Co., Lawson & Son, and Downie & Laird, both in the glass structures and out-door departments; but their collections of everblooming roses are small and poor; they have not sun enough to flower them to perfection. It is very rare to find a dozen good everblooming roses upon a private estate. Where I mentioned the fact of our nurserymen growing them in acres, they were startled. I mentioned Buist & Son, who are well known there, as having two acres of their nursery in everblooming roses, and they were amazed.

In Comelybank Nursery, of Robert Fraser, the noble Rhododendron arboreum, (the first ever introduced into Europe,) is still in good thrift, but the Boronia serrulata which was considered the best plant of its kind in Europe, is dead years ago; and many other plants of large size and of particular note are sold off. The seed shops are small compared with ours. None of them are half the the size of Landreth & Son, Buist & Son, H. A. Dreer, Thorburns of N. York and of Albany, Bliss of Springfield, &c., and they appear to do far less business. Their hand-implements are heavy and stiff compared with ours, but their knives are most choice. Take all in all, we surpass them in commercial gardens and seed and implement shops. The stocks in the nurseries are generally small; it is rare that you can find trees ten feet tall. Their general knowledge tells them that all kinds of plants as well as trees and shrubbery succeed best when planted out when young, that is, if they are kept free of weeds; no plant has to fight its own battle after it is planted, and the people have patience to wait for them to grow—our way of thinking that everything should spring up into great size in a few days, will not do.

I will have to leave the Botany and Experimental Gardens, Cemeteries, and other public gardens for another chapter.

Horticultural Notices.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA.

A MEETING of this Society will be held on Tuesday, September 30th, at the Hall of the Pennsylvania Horticultural Society, South-west corner of Broad and Walnut Streets, Philadelphia.

By order of the Executive Committee.

THE AMERICAN POMOLOGICAL SOCIETY.

IN conformity with a resolution adopted at the last meeting of this National Association, the undersigned, President thereof, gives notice that its NINTH SESSION will commence in the HALL OF THE MASSACHUSETTS HORTICULTURAL SOCIETY, corner of Washington and West Streets, Boston, Massachusetts, on WEDNESDAY, SEPTEMBER 17th, 1862, at 12 o'clock, noon, and will continue for several days. All Horticultural, Pomological, Agricultural, and other kindred institutions in the United States, and the British Provinces, are invited to send Delegations as large as they may deem expedient, and all other persons interested in the cultivation of Fruits are invited to be present, and to take seats in the Convention.

The present season promises to be the most propitious for Fruit that has occurred for many years, and it is anticipated that the coming session, which takes place at the same time with the Annual Exhibition of the Massachusetts Horticultural Society, may be made one of the most interesting which has ever been held by the Society. All the States and Territories are urgently invited to be present, by

Delegation, at this meeting, that the amicable and social relations which have heretofore existed between the members of the Society may be fostered and perpetuated, and the result of its deliberations, so beneficial to the country at large, be generally and widely diffused.

Among the prominent subjects to be submitted at this session will be the Report of the Special Committee appointed to revise the Society's Catalogue of Fruits, and thus to ascertain what varieties are adapted to the different sections and districts of our country. The various State and Local Committees that have not already made their Reports on the Revision are, therefore, solicited to forward them, without further delay, to P. BARRY, Esq., Rochester, N. Y., Chairman of said Committee. And it is further requested, that all other Reports, which are by the By-Laws made returnable to the General Chairman of the Fruit Committee, now deceased, may also be addressed to Mr. BARRY, as aforesaid.

Members and Delegates are requested to contribute specimens of the Fruits best adapted to their respective districts—to furnish descriptions of the same, their mode of cultivation, and to communicate what may aid in promoting the objects of the Society and the science of American Pomology.

Each contributor is requested to come prepared with a complete list of his collection, and to present the same with his Fruits, that a Report of all the varieties entered may be submitted to the meeting as soon as practicable.

All persons desirous of becoming members can remit the admission fee to THOMAS P. JAMES, Esq., Treasurer, Philadelphia, or the PRESIDENT, at Boston, who will furnish them with the Transactions of the Society. Life Membership, Ten Dollars; Biennial, Two Dollars.

Packages of Fruits may addressed as follows: "American Pomological Society, care of Massachusetts Horticultural Society, Boston, Mass."

MARSHALL P. WILDER, President.
THOMAS W. FIELD, Secretary.

PENNSYLVANIA HORTICULTURAL SOCIETY.

DISCUSSIONAL MEETING, JUNE 3.

THE meeting was opened by an essay on the Culture of Window Plants, by Dr. Louis Jack, in, which art the Doctor is famous for proficiency. His remarks contained some quite original views, and we hold them over for next month, in order to give the article a more prominent place in our pages.

MONTHLY DISPLAY, JUNE 10.

THE storm raged with terrific violence; but the spirit of competition could not be damped, and exhibitors and visitors were numerous notwithstanding.

The collections of plants and flowers, first on the schedule of premiums, we will first notice, omitting, as usual, for economy of space, all below the first premiums.

Table Design, to Mr. A. Graham, gardener to Gen. Patterson. Basket of Cut Flowers, to Mr. James Eadie, gardener to Dr. Rush. Also, pair of Hand Bouquets, and the best Hanging Basket. This was a very tasteful object; a fine Fern filling the centre, with Blue Lobelia and other plants arranged along the sides and pendant around.

Ornamental foliage plants, 12 in not over 10 inch pots. Best, Mr. John Pollock, gardener to James Dundas, Esq. They were Tillandsia rosea, T. zebrina, Maranta bicolor, M. vittata, Aralia lepidophylla, Cyanophyllum magnificum, Pandanus javanicus variegatus, Ananissa variegata (variegated Pine Apple), Pteris argyrea, Caladium Belleymei, Tradescantia liniata alba, Gastonia palmata. Best six to Mr. Eadie, gardener to Dr. Rush, were of kinds included in the above lot, showing how popular the said varieties are with cultivators. In the second best, 12 from the nursery of Mr. Robert Buist, though the plants were smaller, and therefore, not fairly in competition with the larger plants of other growers, were some very interesting plants; we noted particularly *Guzmannia picta*, a pine-apple looking plant, but with the leaves in the apex of a brilliant *scarlet;* a large plant of this, well grown as an amateur could afford the room for, would be a striking object. *Begonia Wanderecki* was also a novelty in the hall. The same gentleman exhibited two new plants, exhibited for the first time, which we did not hear noticed in the Committee's report. *Imantophyllum miniatum*, a very pretty sub-bulbous plant of the Agapanthus tribe, with rosy flowers, and *Aralia quinquefolia*.

Roses, hybrid perpetual, 12 cut flowers, Mr. Buist's collection was pronounced best; they were Gen. Jacqueminot, Emperor Napoleon, Dr. Prestoniana, Jules Margottin, Madam Masson, Sydonie, Alexandrine Backmeteff, Caroline de Sansal (the best blush), Cardinal Patrizzi (the best crimson), Mad. Knorr, Giant of the Battle, Baron Prevost.

In the other collections of Roses, the Oriflamme de St. Louis, in Mr. Dreer's lot, a lively flame color, amd Glorie de Santenay, were novel to most frequenters of the hall, and were very much admired. The 12 best roses of any other class, Mr.

Dreer. They were *Teas*—Mad. Bravay, white, beautiful when in the bud, Mad. Villermorz, Canari, Mad. Silvandi. *Bengal*—Archduke Charles, Eugene Beauharnois. *Bourbon*—Victor Emmanuel, Marquis de Balbiano, Souvenir de Malmaison, Omar Pacha, Juliette, Empress Eugenie.

Roses, collection of named varieties, best to Mr. Dreer; a splendid lot, embracing 55 named kinds.

Fuchsias, best six in not over 10 inch pots. The season appeared too early for them, and the only collection offered was from Mr. Meehan's nursery, Germantown, which were awarded the first premium. They were Magnifique, Princess Alice, Glory, Psyche, Schiller (one of the best, white with large pale purple corolla), Emperor Napoleon.

Amongst the beautiful things not provided for in the schedule, and on exhibition, special premiums were recommended for an interesting lot of Gloxinias from Mr. John Pollock, gardener to Jas. Dundas, Esq. Greenhouse Plants to Mr. Eadie, gardener to Dr. James Rush. To Mackenzie & Son, for a collection of Sweet Williams, numerous varieties, and the prettiest sight in that line we have seen for many years. The same firm had a very fine collection of cut hybrid perpetual roses, but without names. A collection of cut Pæonies from Mr. Dreer's nursery at West Philadelphia, was the finest lot ever exhibited, embracing 25 varieties, of many shades of color, and their fragrance filled the hall. The acting committee were Messrs. Ritchie, Robt. Scott, and David Fergusson.

The season being late for vegetables, and the Society's premiums being awarded with the view principally to stimulate *earliness*, the competition was not brisk. Peas were not present. Beets, the best to Mr. Felten, gardener to H. Duhring, Esq., were rather smaller than hen eggs, but considered good for the season. Best Potatoes to the same, were considered superior for the date of the month. They were about as large as good sized walnuts, and comprised the Buckeye, Large White, and Early Frame. Some good cauliflowers were offered by the same party, but not up to the standard of former years. The committee recommended a special premium to Paschall Morris for a fine collection of named cucumbers, they are White Spine, Emperor, Cuthill's Black Spine, Champion of England, Stockwood; so fine a collection, so early, attracted much interest; Messrs S. W. Noble and W. Parry, Committee.

Amongst Fruits, the Strawberry held a kind of carnival—no such a collection having been before the Society for many years, if ever before. There were no less than seventy dishes of almost all the popular varieties, and as we watched the motions of the committee accordingly as they had ventured on a savage pickle like Albany Seedling, or a regular mouthwater like Hooker's Seedling, we pitied the gentlemen who had been made the victims of circumstances, by being caught on such a committee. Mere good flavor, with some regard to size, seemed to guide them, and after wandering up and down for an hour they selected Trollope's Victoria as the lady of their choice, and crowned her queen of strawberries. These were exhibited by Mr. Felten, gardener to H. Duhring, Esq. Mr. Cammack's (of Washington, D. C.) Victorias were larger than Mr. Felten's, but not equal in flavor. The committee report that "The sorts that were in quality and size nearly equal to Trollope's Victoria, were Hooker, Triomphe de Gand, Fillmore, Hovey's Seedling, and Downer's Prolific."

The best collection, one pint each variety, was awarded also to Mr. Duhring, having 14 varieties. The next collection of only 13 varieties were from Mr. Parry, of Cinnaminson, in New Jersey, were much finer fruit, but this premium was offered for number of varieties alone; a special premium was recommended them.

A collection of Seedling Strawberries from Mr. Felten, gardener to H. Duhring, this the first year of bearing, was noticed—only one the committee thought worthy of special report, the "Steinberg Seedling," which they "hoped would be exhibited before the Society again next year." They also say "The contributions of strawberries were of the very finest quality, and in regard to size and color, Hovey's Seedling and Downer's prolific were particularly conspicuous, and a new white strawberry—Abington Blush, by Mr. Geo. M. Kohl, was really beautiful and the best we have seen of the color, and a special premium is recommended for it. The plant is Hermaphrodite."

The strawberries from Washington, D. C., were particularly large and fine, and attracted much attention. The Committee thought their flavor inferior to others of the same kind on exhibition from New Jersey. The "Seedling Eliza," however, was thought very superior. This was from Mr. Cammack. Mr. James Spence, gardener to J. C. Reeves, Washington, sent Triomphe de Gand. Mr. John Saul, La Reine and Jucunda. Grape vines in pots, special premium to W. Smith, gardener to Hugh Davids, Esq. Dunmore Muscadine—a nearly lost variety—was amongst them.

Cut grapes. Mr. Landers, gardener to Dr. Geo. P. Norris, Wilmington, Delaware, special premium. His White Frontignan, considered the best ever

seen at this season before the society. The rare tropical fruit *Philodendron pertuosum*, from James Dundas, Esq., was again before the society. We have before noticed this in our journal in detail; superior to most tastes to the Pine Apple and Banana, it is deserving of widely extended culture by Pomological Epicureans. The Committee were Messrs. Robert Buist, Thomas Meehan, and Charles P. Hayes.

It was gratifying to notice so many, sends from distant parts present; among others, we particularly noted Messrs. J. J. Thomas, of the *Country Gentleman*, Hoopes, of West Chester, and Tatnall, of Wilmington, Delaware.

The next exhibition on the 8th of July we hope will bring out raspberries. Premiums are offered for the best one quart, and for best named collection one pint of each variety. In addition to other things usual there are also offers for six Gloxineas and six Carnations in pots—six varieties each. Competition before this society is open to all, members or otherwise.

STATED BUSINESS MEETING, JUNE 17.

Letters were received from Mr. Walter Elder, in behalf of the Floral and Strawberry Festival of the Volunteer Refreshment Saloon, and from F. G. Rosengarten, Esq., asking contributions of flowers, seeds, gardening tools and any other appliances suited to the use of the convalescent soldiers at the great Military Hospital in West Philadelphia, under the charge of Dr. Hayes, the Arctic explorer.

Large open areas have been laid out for conversion into gardens by the invalid soldiers, and the implements and means are wanting for this purpose.

These appeals will be actively responded to by the members.

On motion of Dr. James, the free use of the Society's hall, library and furniture, were tendered to the Fruit Grower's Society of Eastern Pennsylvania for their proposed convention the coming autumn.

The following gentlemen were elected to membership: Richard Wright, Isaac S. Waterman, James Smyth, Isaac Barton, Joseph M. Hatch, Isaac P. Morris, John J. Thompson, W. L. Edwards, Franklin S. Wilson.

The Secretary presented specimens of eight varieties of Strawberries from the fruit farm of Mr. J. Knox, of Pittsburgh, most of them quite superior to any ever exhibited before the Society. they were Trollope's Victoria, Triomphe de Gand, Vicomtesse, Duc de Brabant, Fillmore, British Queen, Golden Seed, and one, the finest of all, a most superb fruit, without a name. They all received the highest commendation. The British Queen was pronounced by the most experienced English gardeners to be the genuine Myatt's.

The very light and economical fruit boxes used by Mr. Knox were also much approved and thought to be the *ultima thule* of convenience and cheapness.

In response to a call from members present, the Secretary gave an account of a recent visit to Mr. Knox's farm, of which our space permits only a brief summary:—

As Mr. Knox had, at a previous meeting, given a detailed account of his method of culture, the Secretary's remarks were confined to the other leading points of interest. The farm, consisting of one hundred and twenty-five acres, of which, about twenty-five acres are devoted to woodland, roads and buildings, is situated on the southerly slope of the range of hills bordering the south bank of the Monongahela River, opposite Pittsburgh, and presents a very rolling surface. It has no division fences, save for a small piece of woodland, and every foot of it is under culture. Many persons attribute the successful results obtained to the exposure, others to the soil or atmosphere, but while all these have their influences, the mainspring of the whole is *culture!* thorough, intelligent, unceasing culture. The exposure of most of the farm is southerly and westerly, but a considerable part is to the north and east; the soil varies from a dark, rich loam, to a tough white clay; but everywhere throughout the estate the crops of all kinds show the effect of the deep plowing, subsoiling and the constant agitation of the soil, and were all as abundant as could be desired.

Among strawberries, the Triomphe de Gand still maintained its supremacy, and is all that has ever been claimed for it. The finest show of strawberries was growing on a southerly slope, the rows running east and west, those running north and south being not so good. In the former, the fruit falls over the south as if courting the sun, and ripens in large clusters of the richest color. These were Iowa, Fillmore and Triomphe de Gand: the Fillmore was truly superb.

Mr. Knox does not favor very high manuring for strawberries, but plows and subsoils 20 inches deep before planting, and then mulches. Several acres have been laid out in vineyards; the vines planted six feet apart, and the rows eight feet equidistant; between the rows are four lines of strawberries, fifteen inches asunder, planted in quincunx, which will remain for two to three years, until the vines

are in full bearing. The first year the vines are staked; the second year stout locust posts are put down, eight feet equidistant, projecting, say fifteen inches above the surface; to each of which an upright scantling eight feet high is firmly spiked. These are connected by a bottom rail about twelve inches from the ground, and a top rail at seven feet in height. Midway between these uprights a single vertical slat is nailed, eight feet high, two inches wide, and one inch thick. To this the young vine is trained. Next year similar slats are nailed over the whole trellis, nine inches apart, presenting the appearance of a poultry yard fence. In this way the vineyard trellis is progressively made; the money is outlaid only as fast as required. It costs $200 per acre.

Vines in all stages, from the youngster of three months to those of five years old, were seen in different parts of the farm. The growth and productiveness of those three and four years old was something wonderful. Mr. Knox had stated at a previous meeting, that twenty-five pounds of Concord grapes had been gathered from a vine three years old. The speaker took pains to make a careful estimate of the promised yield of the Delaware, Concord and Hartford Prolifics he saw, and thinks they will *average* more than that amount. A single cane of the Delaware, 8 feet high, was estimated to yield eighty bunches, or about twenty pounds.

The arrangement of the trellises seems an excellent one for training the canes—the vines being grown on the renewal system—and it also serves to break the force of the wind, sifting it and dividing its wave into gentle currents. It was observed that the young renewal cane was allowed to fruit to its full capacity; in some cases even two of them were growing from the spur, both laden with fruit.

A plot of ground of about two acres, contained one hundred thousand young Concord vines propagated from single eyes this spring, by the hot water circulation system, in plain wooden propagating houses about 100 feet long, by 12 feet wide, each house capable of growing 8000 vines, and this three times repeated in the season.

A thrifty young peach orchard attracts general attention. The limbs branch out from within six inches of the ground, and the spreading branches completely shade the ground. An apple orchard, some years of age, is also very healthy and productive. Several acres are devoted to raspberries, currants, blackberries and gooseberries; all giving evidence in their large healthy growth, and astonishing productiveness, of the thorough and conscientious preparation of the soil. The English gooseberry suffers no mildew here; due perhaps in part, to the atmosphere, as around Pittsburgh generally, it is exempt from this blight.

There is no attempt at display in the buildings, forcing-houses, &c.; everything is plain, economical and substantial. Nothing is spent for effect, nothing is spared for results.

BROOKLYN HORTICULTURAL SOCIETY.

The first June semi-monthly meeting was well attended.

Mr. Burgess exhibited four seedling strawberries, "General Scott," "General Anderson," "General Lyon," and "Garibaldi." The last was considered best. Mr. Weir exhibited some Fuchsias, amongst which Minnie Banks and Comet were much admired. Mrs. Humphreys exhibited Bouquets, and Mr. Fuller Herbaceous plants.

The subject for discussion was, "The neglected Fruits and Plants of America."

Mr. Fuller pointed out that, under the fostering care of European governments, science had so progressed, that while we were content with developing our mere material prosperity, they were exploring our territories, discovering our plants for us, and naming them, by right of priority of description, after their own heroes and men of science; while the attempts of our own Patent Office in that line, was a disgrace to civilization and the age.

Several other speakers expressed similar views.

President Degraw stated that a lack of pure taste and genuine interest in horticultural pursuits had much to do with the apparent neglect of the public in our beautiful plants and fine fruits. He instanced cases of wealthy men in New York, who had costly conservatories, "turning the penny" by the sale of cut flowers to bouquet dealers. He had found the ladies generally to have the most sincere love for horticulture. With the other sex it was usually mere show, or a supposed following in the wake of fashion. He considered it one of the duties of the Brooklyn Society to remove the apathy that existed with the general public, as one of the greatest obstacles to the success of the society. They had to convince the dollar hunter that a garden was the purest af all human pleasures, and that there was something else in human life worth living for, than the perpetual following of dollar hunting.

The half annual exhibition was no doubt a fine affair, judging from the exertions made; but as we close this department of our journal on the 20th of the month, we can give no account of it in this number.

THE
GARDENER'S MONTHLY.
DEVOTED TO
Horticulture, Arboriculture, Botany & Rural Affairs.

THOMAS MEEHAN, Editor.
W. G. P. BRINCKLOE, Publisher. AUGUST, 1862. VOL. IV.---NO. 8.

Hints for August.

FLOWER-GARDEN AND PLEASURE-GROUND.

Though so much has been said in our *Monthly* on *early* fall planting of evergreens, we continue to receive numerous enquiries on the subject, and we think we cannot do better than reprint what we have said in a previous volume on this subject:

"The latter end of August is one of the best seasons of the year to transplant evergreens. The young growth of the past year has got pretty well hardened, so as to permit of but very little evaporation,—and the earth being warm, new roots push with great rapidity, and the tree becomes established in the ground before cold autumn winds begin. The chief difficulty is that the soil is usually very dry, which prevents much speed with the operation; and the weather being generally very warm, the trees have to be planted in the ground almost as fast as they are taken up; so that it is not safe to bring them from a distance. It is as well, therefore, to make all ready in anticipation of a rain, when no time may be lost in having the work pushed through. Should a spell of dry weather ensue,—which in September and October is very likely,—one good watering should be given, sufficient to soak well through the soil and well about the roots. A basin should be made to keep the water from running away from the spot, and to assist its soaking in. After being well watered, the loose soil should be drawn in lightly over the watered soil, which will then aid in preventing the water from soon drying out again."

When White Lilies, or any other spring-flowered bulbous plants have done flowering, and the stems died away, they should be taken up and reset; the disease in Lilies often met with is probably caused by their being too long in one place.

Most of what is to be done now in this department consists of the routine duties of neatness,—tying up, pegging down, removing faded blossoms, collecting and destroying insects, etc.

Many suffer their flowers to produce seed, but this injures the flowering. If it be particularly desirable to save seed of some things, allow only just as much to ripen as will be needed. In some cases, cutting off the flowers as fast as they fade, doubles the season of flowering.

Auriculas, Polyanthus, Pansies, Dasies, and other of these early flowering, half hardy plants, commence their root growth about the end of this month, when the time has arrived for replanting. Good fresh, and yet half decayed, sod from a pasture field, is the best to grow them in. Those who have the advantage of pots and frames, can repot also at this season.

FRUIT GARDEN.

Take out the canes of the Raspberry and Blackberry that have borne fruit,—and thin out all suckers except those intended to produce fruit the next season. Many growers go over their rows at this season, and shorten off about one-fourth of the cane with a pair of shears. They say it increases the productiveness, which we think likely; but we would not do so till the end of the month, when there will be less danger of the eyes bursting, which will defeat the object.

Strawberries grown in hills should have their runners cut off as they appear; and those grown in beds be thinned out considerably.

August and September are favorite months to plant out strawberries, with those who desire a crop of fruit the next season. In making a strawberry-bed, a warm, dry spot of ground should be chosen, with, if possible, a good loamy or clayey subsoil. A moist, wet situation is very unfavorable. It is best to subsoil at least two feet deep, and if the soil is

poor, let it be well enriched with well-decayed stable manure. In setting out, take care that the plants do not become dry from the time they are taken up till they are replanted, and see that they do not wither afterwards. Many persons cut off the leaves, if they are afraid of their wilting under hot suns, but a much better plan is to shade. Inverted 4-inch flower-pots are excellent for this purpose; they may be taken off at night. The dews will so invigorate them, that the shade will only be required for a few days. Sometime in September they may need a good watering; but this should never be attempted unless a thorough saturation of the bed is given; and in a few days after, the hoe and the rake should be employed to loosen and level the surface, which the heavy watering will, in all probability, have caused to bake and become very crusty. Where time can be spared to layer a few plants into 3-inch pots, they are very successfully transplanted afterwards, and much after labor in watering and shading avoided.

In this section of the Union we have had, to this time, almost continual rains. The Grape has luxuriated in this moist atmosphere, and never looked better. We may now expect a dry fall season, and the probability is that mildew will follow to an alarming extent. Extra precautions should be taken in time, by mulching, shading, &c., where practicable, to counteract the effects of this dry change. Plaster, salt, and other liquidizing materials may also be tried no doubt advantageously.

VEGETABLE GARDEN.

Keep weeds from your compost heaps, as they exhaust the soil, and bear seed for future brow-sweatings.

Corn salad is often sowed the end of this month. It does not do well in damp soil or low situation.

Cut down straggling herbs, and they will make new heads for next season.

As soon as your vegetable crops are past kitchen use, clear them out. Never suffer them to seed. In the first place, a seed crop exhausts the soil more than two crops taken off in eatable condition; in the next place, the refuse of the kitchen is likely to produce degenerate stocks. Good seed saving is a special art by itself, claiming always the earliest and best, to ensure a perfect stock.

Cucumbers, squash, and other similar plants, often suffer from drought at this season. Cold water does not help them much, but a mulching of half-rotten leaves strengthens them considerably.

Endive sow and plant out, see also article in another column.

Sow Lettuce for fall crop, thinly, and in deep and very rich ground.

Early Valentine Beans may still be sown early in the month,—the soil for a late crop should be well trenched, or if the fall be dry they will be stringy and tough.

The full crop of Celery should be now set out,—the soil can scarcely be too rich, and old hotbed dung has been found to tickle them into an amazing good humor with their cultivator.

Turnips for fall use may now be sown. Soil rich and seed sown thinly. There are many improved varieties; but the Strap-leaved Red-top will give good satisfaction.

Communications.

SKETCHES OF THE HISTORY OF THE ROSE AND ITS PRESENT CLASSIFICATION.

BY WM. HEAVER, CINCINNATI.

History affords no other example of such extended and universal admiration of so many and distinct races of people for any other flower as has been and still is accorded to the Rose. In proof of its antiquity, allow me to introduce a few extracts from a volume on the subject, published in London this spring, entitled "The Amateur's Rosarium." Solomon says, "Come, let us fill ourselves with costly wines and perfumes, let no flower of the Spring pass us by; let us crown ourselves with rosebuds before they are withered." The Greeks, like the Hebrews, chose it for chaplets at their banquets, and as a gift most acceptable to those they loved. Anacreon only gave popular customs a poetic dress when he wrote:

"To make the beverage divine,
Mingle sweet roses with the wine;
Delicious will the liquor prove,
For roses are the flowers of love;
And while with wreaths of roses crowned,
Let laughter and the cup go round."

Sappho, the tenth muse, was the first to bestow on the rose the title of the Queen of Flowers, in the following verses:

"Would Jove appoint some flower to reign,
In matchless beauty on the plain;
The rose, mankind will agree,
The Rose, the Queen of Flowers should be.
The pride of plants, the grace of bowers,
The blush of meads, the eye of flowers;
Its beauties charm the gods above,
Its fragrance is the breath of love."

It is the Rosa of the Romans and the twice blooming rose beds of Pæstum are frequently men-

tioned in their poetry. When Horace advised his friend Delius to live joyously, he told him to retire into the country, and

"There bring thy wine, thy odor spread,
Let blooming roses crown thy head,
Whilst time, and age, and life permit."

Has modern philosophy improved on this terse advice of the ancient poet, so far as terrestrial bliss and luxurious enjoyment are concerned?

The Rose, by the ancient Romans, was dedicated to both Venus the Goddess of Love, and Harpocrates the God of Silence, and in aftertimes models of Roses were placed over the confessional as a symbol of silence, whence, undoubtedly, originated the term "Under the Rose." Newton, in his Herbal to the Bible, published in 1587, says:—"I will heare adde a common countrye custome that is used to be done with the Rose, when pleasante and merry companions doe friendly mete together, to make good chere. As soon as their feast or banket is ended, they give faithfull promise mutually one to another, that whatsoever hath been merrily spoken by any in that assembly, should be wrapped in silence, and not be carried out of doores. For the assurance and performance whereof, the tearme which they use is, that all things there saide, must be taken as spoken, (under the Rose;) whereupon they use in their parlors and dining rooms to (hang Roses over their Tables,) to put the companie in memorie of secresie, and not rashly or indiscretely to clatter and blab out what they heare."

A relic of this custum is still to be seen at Lullington Castle in Kent, the mansion of Sir Percival Dyke. In its hall is a huge representation of a Rose, encircled by this inscription:

"Kentish true blue, take this as a token,
That what is said here under the Rose it is spoken."

In 1453, the White Rose being blazoned on the shield of Richard Duke of York, and the Red Rose on that of Henry Duke of Lancaster, their contest for the crown of England was aptly termed, "The War of the Roses"—a war so fraught with misery to England that Sir Walter Scott's lines are no more than just:

"Let merry England proudly rear
Her blended Roses bought so dear."

Roses have been adopted for many ages by the Popes as tokens of their good wishes. When a Princess of France was married, the Pope then reigning sent her a rose which he had blessed. Servius IV., in the year 1009, is said to have been the first on Christmas night to consecrate roses and other tokens, to be sent to those whom he wished to honor. Leo X sent a consecrated rose to Frederic, Duke of Saxony, with a request that he would banish Luther. These roses were made of gold.

Parkinson, who wrote in 1620, states there were but twenty-four kinds of roses at that time known in England, including the Sweet Briar. In the quaint style of the day, "I will begin," says this author, "with the most ancient and known roses of our country, whether natural or not I know not; but assumed by our precedent Kings of all others, to be cognizances of their dignity, the white rose and the red, whom shall follow the damask of the finest scent, and most use of all the other sorts." Among others of his twenty-four sorts is the particolored rose, called of some York and Lancaster.

The double Yellow Rose, of great account, both for the variety and doubleness, "though most of them fall or wither away, so that its shy flowering is not a symptom of declining vigor or forgotten modes of culture." It was first procured to be brought into England by Master Nicholas Lete, a worthy merchant of London, and a great lover of flowers, from Constantinople, which, as we hear, was first brought thither from Syria. It perished quickly, both with him and with all others to whom he imparted it; yet afterwards it was sent to Master John de Franqueville, also a merchant of London, and a great lover of all rare plants, as well as flowers, from which is sprung the greatest store that is now flourishing in this Kingdom.

The Moss Rose was introduced into England at the beginning of the last century, and first mentioned by Finber, in 1724, and in proof of the little interest at that time felt in such matters, we have no record of the time of its introduction, or by whom introduced. (A proof that the art of advertising was not as well understood in those days as in our own times, as the introduction of Augusta, America and Gen. Washington will amply testify.)

Having quoted enough to prove the estimation in which our favorite has been held by the master people of ancient and modern times, I will conclude the historical portion of the Rose with the observation that the love of flowers has never had the effect of enervating or effeminating the people who have been most given to their cultivation, as the references fully establish with regard to the ancients, so will the acts and examples of the people of our own days correspondingly prove, unquestionably, the four most warlike and enterprising people of the present age are the French, English, German and American, and these four nations are as much in advance of other peoples in their practice of Horticulture and love of flowers, as in the more rugged walks of war, commerce or manufactures. As a *practical Florist* it gives me pleasure to be able to

make this assertion, fearless of being challenged for its accuracy.

The classification of the different species and varieties of the rose, appears to the present time to have been left to the somewhat arbitrary and varying notions of individuals. I know of no general system having been promulgated by any horticultural authority sufficiently influential to be generally adopted and followed by cultivators universally. A recent English work states the genus to consist of seventy species, with numerous sub-divisions. Buist, in 1844, divided them in classes as follows: Rosa Alpina, the Boursalt Rose; Rosa sempervirens, the Evergreen Rose; Rosa Banksiana, the Lady Banks Rose; Rosa multiflora, Muletiflora Rose; Rosa rubifolia, the Prairie Rose; Rosa rubiginosa, the Sweet Brier; Rosa lutea, the Yellow Rose; Rosa spinosissima, the Scotch Rose; Rosa centifolia, the Provence or Cabbage Rose; Rosa centifolia muscosa, the Moss Rose; Rosa Gallica, the French Rose; Rosa damascena, the Damask Rose; Rosa alba, the White Garden Rose; Hybrid Chinese Rose; Noisette Rose; Rosa indica odorata, the Tea Rose; Rosa Bourboniana, the Bourbon Rose; Rosa Lawrenciana, the Miniature Rose; Remontante, or Hybrid Perpetual Rose; Perpetual Damask Rose; Rosa microphylla, the Small-leaved Rose; Rosa moschata, the Musk-scented Rose; Rosa indica, the Bengal Rose. To enter into a detailed description of the distinctive difference between these varied classes would, I consider, be a useless and uninteresting business at the present time. I will briefly mention and endeavor to elucidate from the specimens before us, the various classes of the rose here represented, beginning with the Bengal, or, as sometimes called, the China Rose; next, the Rosa indica odorata, or Tea Rose; the Rosa Bourbonienne, or Bourbon Rose; the Remontante, or Hybrid Perpetual Rose; the Noisette. This class originated, or was grown, from seed by M. Noisette, near Charleston, S. C., and is supposed to have been a production of the common China rose and white musk cluster. The distinctive characteristic of this class is the habit in common, we have three distinctive characteristics or modifications. First, we have the long, rampant character of growth as shown by Lamarque, Chromatella, Solfatarre and others; second, the medium bushy habit of Champney, Orloff, and Grandiflora; third, the low, dwarf habit of Admiral de Rigney, Amie Vibert, and La Pactole. You will observe that the Class 10 embraces no high colored varieties within its limits, whilst its near congener, the Bengal, is rich in coloring, yet contains some individuals of the purest white. In Bourbons we have every shade of color, from the darkest crimson purple to the faintest blush; but the pure white has not yet been produced in this class.

In Hybrid Perpetuals we have the opportunity of contrasting or comparing the rose of the present day with those cultivated by and so highly prized by our forefathers; and as this comparison will be of a sweetly odorous character, I am sure, were our ancestors present, they would admit the superiority of the modern inventions. I have some specimens of varieties cultivated to a limited extent in this vicinity twenty-five years ago, and compared with our now reigning favorites, the contrast is certainly as great as would be that of a fashionable belle in the costume of that date with any of our daughters in the prevailing mode. There is this difference, however, in the case of the rose: Dame Nature is the modiste. We are not able to name the artiste who moulds the form in the other case. From a personal knowledge as regards England, and a general one as regards the Continent of Europe, I feel some degree of local pride, or vanity, if you please so to term it, in stating that but few provincial cities in Europe can surpass Cincinnati in their displays of fine roses of the recent productions; and, although our city proper can no longer lay claim to the title of the City of Roses, yet our beautiful suburbs can, upon any public occasion, contribute as many of Rosa's beautiful emblems as any other city in the Union.

ON CIRCULATION OF THE SAP.

BY MR. ELMER BALDWIN, FARM RIDGE, ILL.

I DO not propose to complain of the criticisms on my communication in the June number of the *Monthly*, for my object is to elicit truth and not to sustain a theory; and I have great confidence in the opinions which the practical experience and research of the Editor of the *Monthly* enable him to give. Yet, to my mind there seems a want of precision and certainty in the views usually advanced on the circulation of the sap, in fact a contradiction which should be cleared up. I would enquire, Are the leaves the sole elaborating organs? If not, what other part has that power?

Is it possible for the plant to make growth or to increase its organized matter from the crude sap which has not been converted by the elaborating organs?

It is well-known that cuttings usually make top growth before they have roots. Some varieties of grapes will make a growth of two or three inches

and die, not having developed any root, to the great annoyance of the cultivator. Willow, Poplar, Linden and many other varieties of timber, cut in winter and used as top poles for fencing, will throw out sprouts six to eighteen inches long during the spring and early summer? Do they grow without sap? there was no sap to be found at the time of cutting in the winter.

If the warmth does not liquify or develop sap from material elaborated and deposited in the fall, from whence is it derived?

The point which you say is "important if true," is nevertheless *true*, as any farmer's boy can testify who has made rails and lumber in the spring, from Chestnut, Willow and many other varieties of timber, which was cut in the winter. About the time the sap starts in the standing tree, it is quite freely developed in the second branch or trunk. I did not wish to be understood as saying in my former article that the material was increased by such development, but endeavored to account for it in another way.

It is held that sap ascends in winter through the frozen roots. Liquids do not pass through conductors of medium size when congealed, and it would seem equally difficult for them to pass the small vessels of the roots under like circumstances. If the sap does not pass the frozen roots, how is it that the branch of a Grape-vine, under the influence of artificial heat, developes leaves and fruit germs, while the roots are firmly encased in the frozen border outside the grapery?

I would like a settlement of the points discussed, not caring which theory proves true, but consider a true knowledge of the subject important to a successful system of cultivation. Or, if our knowledge of nature's operations is so limited that a consistent theory cannot be established, then it will be better to acknowledge it, for an erroneous theory will lead to errors in practice.

[We would rather leave comment on Mr. Baldwin's paper to those of our correspondents who are making the subject a special study. Our former remarks were intended as suggestions rather than criticisms. The question is surrounded by uncertainties, and the theory as laid down in standard works very unsatisfactory. This renders the field of study a very interesting one to those who have the opportunity of making original observations. Any thing further of this kind, either from Mr. B. or other friends, will be welcome, and we may have our say when all have done.—Ed.]

WINDOW GARDENING.

BY DR. LOUIS JACK, GERMANTOWN, PA.

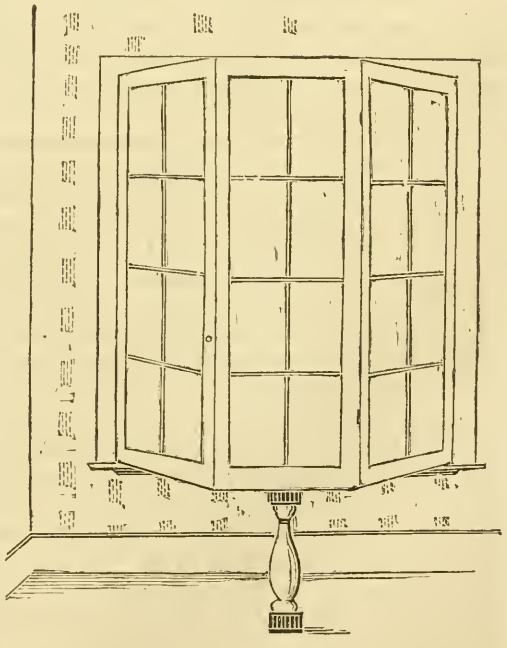
The subject of Window Gardening must be one of interest to all who have a love for plants, and especially so to those who have neither the conveniences nor the ability to enable any greater indulgence of their fondness and display of their tastes than can be effected within the compass of a window or two,

To aid in provoking discussion, and for the sake of making my portion of the effort more easily understood, it shall be a simple narration of experience.

To all who have attempted the culture of Window plants of a delicate nature, the application of an even heat, and the maintenance of the atmosphere in a constant state of humidity, have been always the conditions most desired, and these have proved the most difficult of attainment. To this branch of the subject I will be confined.

In order to protect my window plants, which have generally been composed of the Filices and the Lycopodiums, with others requiring like treatment, from an atmosphere too dry in its nature, I have pursued the plan of enclosing a space on the inside of the window, projecting the case into the room, and giving it the form of a "bay window."

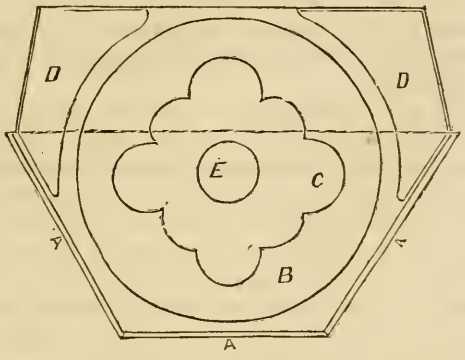
Fig. 1.



This is indeed but a Wardian Case, one side of which is composed of the outer sash. The dimensions are, in height 5 feet 8 inches; in width 3 feet

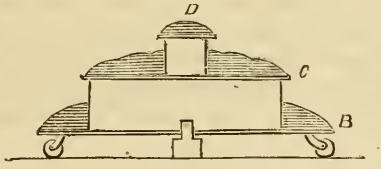
7 inches (this being the size of the window-frame), and in depth 2 feet 8 inches. The accommodation of the plants is effected by the convenience of a circular stage of 31 inches diameter, revolving on cas-

Fig. 2.



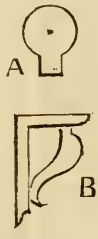
tors, upon a central stud. This form of stage ena-

Fig. 3.



bles a variety of arrangement, and allows access to all parts for the purpose of watering, and giving whatever attention may be needed. Other plants are supported by small bracket shelves screwed to the window-frame and the side sashes.

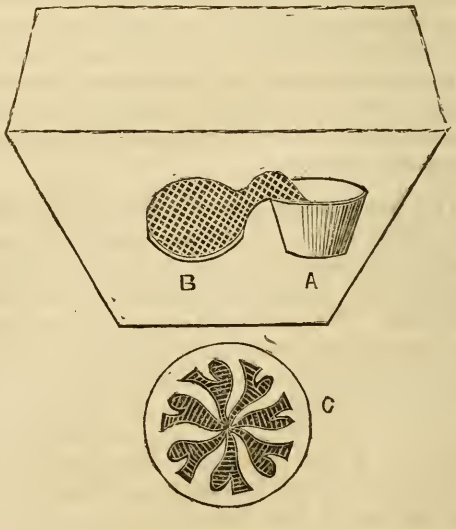
Fig. 4.



There is also room to suspend from the top one or more hanging baskets. Now while this form of plant case retains the moisture constantly arising from soil, equally as well as an ordinary Wardian case, is better supplied with light, and affords the opportunity for a much more tasteful display of plants, it is liable to too great a depression of temperature in consequence of so much exposure to the external air; by which means, in the coldest days, and during the bitter nights, the plants suffer for heat. This difficulty is increased, too, by the fact that the parts about the outer sash can scarcely be made securely air tight. In my own early experience it has been necessary at times to open the inner sash, thus frustrating the object of enclosure: letting out the vapor and seriously impairing the health of the plants. The injury from thus opening, when long continued, was quite marked; and although we had much enjoyment of the contents of our window, there was this trouble in the way of good satisfaction.

To give heat, the next winter, and at the same time fully retain the necessary humidity, circulating pipes of water were arranged about the bottom of the case, near the stage. This apparatus was heated by gas, the heater being beneath the bottom board in order to avoid any injurious products of combustion, as well as the accidental escape of gas. In this way the water was readily heated even to boiling along the pipes, and better results were attained—but at the expense of greater complication and considerable attention in regulating the heat. But still there was a serious difficulty to overcome; the air chilled by the outer glass would fall and occupy the lower part, where the greater portion of the plants were kept, thus driving the heated air to the top, where perhaps there was already sufficient. In this dilemma, the heating apparatus was cast aside; and it here occured to me that if openings were made in the bottom of the case the cold air would flow out by virtue of its greater specific gravity, and be replaced by the warm air of the room flowing in, if an equivalent opening was made in or near the top. But it will be at once observed that in thus commanding a circulation of air through the case, we have the moisture swept away, and have the old trouble of dryness staring us in the face. This was being tossed, back and forth, on the horns of the dilemma. To supply this current of warm air with water was now the question, and it was accomplished by simply stretching over the opening at the top a netted fabric made of loose

Fig. 5.



cotton thread, the meshes of which were moderately close. One end of this fabric was then immersed in a vessel of water, and by capillary attraction it was kept constantly wet. The current of warm air in flowing through and around the net-work became freely saturated with moisture—at least sufficiently so to keep the inner air always in so humid a condition as to maintain a constant coat of dew upon the glass of the window.

The vessel best adapted for such purpose is one similar in form to the one described on p. 276, Vol. III. *Gardener's Monthly*, for a different purpose. It should be constructed without any bottom within the inner circle, and should be sufficiently large to contain a half gallon of water. Along the edge of the inner circle, at intervals of about two inches. short wires should be soldered: by these the netting is kept in a state of extension, and is immersed at its entire circumference. The advantage of this form of vessel will be seen at once, since it enables a more free saturation of the threads,

The fabric of soft cotton thread, called yarn, was made by crochéting , in the way in which ladies are familiar.

To add to the ornamental effect, the outer case of an ordinary ventilator, of 10 inches in diameter, was fastened to the inner side over the opening. The valves were removed, and an addition to the upper rim was made of an inch or more in height, to which extension the network is fastened, in the first method.

The proof of the value of this improvement was found in the bettered appearance of the plants, in a greater evenness of temperature, and the constant and marked presence of sufficient humidity, as well as in more unmistakeable and more tangible signs. Thus, when the weather was cold, the current of cool air from the lower opening was surprisingly strong, and the water was rapidly carried away from the vessel; whereas, in warmer days, when the outside temperature was near the heat of the inner, the current would be scarcely felt, and the vessel lost but little of its contents.

It will be seen that many modifications may be made in the arrangement and adjustment of the netting. In small conservatories, heated by the warm air of the living room, the arrangement may be as here described, either on the top or at the side in the place of one of the panes of glass; and in larger conservatories, attached to heated rooms, there may be several parallel frames of netting, set side by side in a short passage arranged for the purpose.

It will be seen at slight thought, that every desirable condition is fulfilled by this mode of regulating heat and moisture. In any ordinary living room, where a temperature of 65° to 75° Fahr. is maintained, the heat of the case will be but about 5° lower. In addition to the fulfillment of the two most important conditions before mentioned, a circulation of air is kept up without injury, and all is effected without complication, and requires but little attention. It is indeed, almost self-regulating. It need hardly be stated that to recieve full advantage of this method it is necessary that all parts of the case should be completely closed, that the warm air may have but one channel.

In explanation of this circulation, it may be stated that in case two rooms were placed side by side, one being at a temperature say of 100°, the other at 32°, if communication was made between them by two openings,—one at the bottom and the other at the top,—that the air of the colder room would flow out through the opening at the bottom and the warm air would be driven into the cooler room through the upper orifice, until an equilibrium would be established. This circulation would be constant should by some means one of the apartments be maintained constantly cooler than the other. This is the condition in the small conservatory under consideration.

It will also be observed that much the same relation is maintained, and much the same changes and compensations are taking place in this case as occur in the aquarium, and which make that instrument such a source of interest. It is a repetition of the wonderful play and counterpoise of natural forces. By means of the circulation of air, the plants are more freely supplied with carbonic acid and ammonia, which must, in some measure, be decomposed; and in grateful return the air of the parched rooms is made more moist, and in all probability benefitted chemically. The relation is the same exactly as in the aquarium: the ferns represent the fishes, the air the water, and the plants fulfil the same functions in purification, as the aquatic plants. This consideration adds interest to the matter, and raises it above the mere gratification of sense, although this is sufficient to kindle the enthusiasm and warm the interest of any lover of these things of beauty.

Another matter closely allied to that of heat, and equally essential, is the one of light. From experience and reasoning, preference should be given to an eastern exposure, inclining to the south. If too much too the south, to great heat is liable to occur in the middle of the day; and if deprived entirely of the rays of the sun, there lacks that vigor and

freshness which the face of the sun always inspires. It is well also, if possible, to place the case in such position that an adjoining window may throw light upon its back part, for every ray of light brings its measure of encouragement.

It is trusted that what is here written has added some light to this matter, and it will fulfil its intentions if some encouragement is given to a most rational source of pleasure, and aid in introducing plants to the homes of the many, bringing with them their moralizing influences and heathful benefits.

EXPLANATIONS OF THE ENGRAVINGS.

Fig. 1. Exterior of the plant case as seen from the room.

Fig. 2. Ground plan, showing arrangements of the case. A, inner sash; B, lower shelf; C, second shelf; D, boxes for mosses; E, centre piece.

Fig. 3. Section of staging, showing B, C, and E, in Fig. 2.

Fig. 4. Ground plan of bracket-shelf referred to; B, section of same.

Fig. 5. Shows the hydraulical arrangment. A, vessel of water; B, netting; C, ornamental covering for lower side.

[We have great pleasure in transferring the above from the proceedings of the Pennsylvania Horticultural Society to our pages. It is not astonishing that the meetings of the Hortiultural Society are becoming so increasingly popular, when it can command the services of such distinguished lecturers.—Ed.]

THE HAUTBOIS STRAWBERRY--*FRAGARIA ELATIOR.*

Called by the French "Les Caprons."

BY W. R. PRINCE, FLUSHING, N. Y.

The original variety of this European species was introduced to our country during the period when we were Colonies of Britain. It was an hermaphrodite plant, and was accompanied by its male or staminate congener. The latter producing no fruit the whole force of the plant went to the formation of runners, and new plants were in consequence so rapidly multiplied that they soon completely overran the fruit bearing plants, thus rendering the beds full of unproductive plants, which, by those who did not understand their sexuality, were deemed sterile. The ignorance and neglect of proper sexual selections of the plants resulted in such abortive crops, that the culture of the Hautbois became almost entirely abandoned throughout our country, and, of late years, there have scarcely any been seen in our gardens. The sexual theory being now fully comprehended and adopted, the culture of this important Fragaria family is being resumed, and as a number of new prolific varieties have been produced from seeds, there do not now exist any difficulties or objections to their general culture throughout our gardens and fields. This result is a very happy one, as the fact seems to have been almost lost sight of, that this is "*The Strawberry par excellence of amateurs*," on account of its high and exquisite flavor. In point of fact nothing of the Strawberry class can be more delicious than the Hautbois varieties mingled with the Pine varieties; thus combining those of the highest flavor with others of the greatest sweetness and perfume. The berries being firm are very appropriate for preserves. The plant is one of the most hardy and vigorous, and will prosper in the most northern clime. The finest varieties which have been produced in France, Belgium and Britain, are the following:

Bijou des Fraises, or Jewel of Strawberries,	
Black Hautbois,	Capron Royal,
Capron framboisé,	Capron ordinaire,
Belle Bordelaise,	Monstrous Hautbois,
Myatt's Hautbois,	Myatt's Hautbois.

Of these the Belle Bordelaise and Prolific Hautbois will, when grown in a moist soil and irrigated produce an autumnal crop.

The foliage of all the varieties is large, pale green and soft, downy beneath, on tall petioles; the peduncle straight and strong; flowers large, numerous, male, female or hermaphrodite; fruit large, round or oval, dark red, with a peculiar high musk flavor. This species is a native of meadows and other moist soils, whereas the European species are found in dry soils and in the Alpine regions. It will, therefore, be advantageons in dry seasons to insure the perfection of the fruit and an abundant crop, by watering the beds plentifully after the fruit is set, and not to gather any until fully matured.

It is the peculiar characteristic of all the three indigenous Fragaria species of Europe, to produce their blossoms at the summit of peduncles elevated above their foliage, and all, except Collina, sustain their fruit in this position; but the peduncles of the Collina species are so slender and weak, that as the fruit attains to size, the weight is so much increased that the berries sink entirely beneath the foliage, and, at maturity, not a fruit can be seen until sought for beneath the profusion of leaves.

THE PLUM KNOT.

BY E. LOW, BANGOR, MAINE,

Having received many interesting and valuable suggestions from your *Monthly*, I feel under obligation to give as well receive; but I find my facts

will hardly sustain the theory of your correspondent A. S., in the last *Monthly* on the "Plum Knot." The climate and soil of this vicinity have been considered peculiarly adapted to the culture of the Plum; and several fine varieties, such as the Penobscot and McLaughlin, have originated here. But a course of misfortunes has befallen us, and many of our fine Plum gardens have gone to decay. First came a series of sudden severe frosts after several warm days in winter, and killed many valuable Plum trees, and most of our Dwarf Pears; next the curculio devastated our fruit crop, and the last and most deadly foe of all, the "Black Knot," threatens to take all that remains.

You readily see the interest we take in any communication that can throw any light upon the subject. Several years since I adopted the plan of picking up and burning the bitten plums, and I have before my window a fine collection of trees completely loaded with fruit; some I have had to prop up to sustain the load, and among them the Columbia, a large purple plum, bending under its load; several McLaughlin's and Washington's, Imperials and Blecker's, Dana and Prince's Gages, all full of fruit without a sign of curculio or Black Knot. My treatment of the former I have alluded to, but the knot is more troublesome. I make it a rule to cut it out on its first appearance, never leaving it on the tree over night; yet in the entire absence of any evidence of the curculio on the fruit, I have had to use my knife on the knot more or less since March.

Again, trying to save a fine collection of trees owned by one of my neighbors, (for if a man would save himself from the ravages of the knot his neighbor's trees must be looked after), I cut off several bushels of knots last spring, completely clearing the trees, yet, to-day they seem worse than before; many of them are well fruited, and the fruit not badly bitten.

Query—Will the curculio pass by the fruit to sting the bark of the tree? Who can tell?

[Since our last chapters on the Plum Knot, we have heard nothing of the Monitor (Dr. T., we think) or of the Merrimac (A. S., of course) of the question. The terrible collison in our last seems to have frightened both of them, and like their old prototypes, they seem pretty shy of each other for the time being. Now that the Monitor has a little Naugatuck to help him, we may soon expect to hear a great explosion on the Merimac side.—Ed.]

TOWARDS JAPAN.

LETTER FROM MR. THOMAS HOGG.

In our last issue we recorded the safe arrival of this excellent Botanist and Horticulturist in California, on his way to Japan. We have since been kindly permitted to publish a letter of Mr. Hogg to a horticultural friend here in the East, which furnishes a great deal of very interesting matter. We hope to receive a continuance of these favors as opportunities offer.—Ed.]

San Francisco, June 5th, 1862.

Well, here I am, as you will observe from the date of this, within the Golden Gate, in the land of promise to some, and to not a few, of disappointments. Having an hour's leisure, I propose improving it by a little conversation with you, as in times past.

I do not intend to give you a detailed account of my voyage hither, as it was but the experience oft repeated of others who have come before, of sickness (I was but little sick) and complainings; ennui, gossipings, flirtations, and fun; but shall limit myself rather to horticultural matters and such things, of like mutual interest. Our ride across the Isthmus will ever be remembered as a day of enjoyment. It was a clear, pure day, and the happy release from confinement on board ship gave a charm to life ashore, that I no longer wonder at sailors running wild after a long voyage. The first thing that strikes your attention are the cocoa-nut palms planted at the landing, and around the dwellings of the officers of the Railroad Company, but aside from these there are no others that I saw.

The town of Aspinwall is a miserable place, yet there are gardens attached to a few of the houses, which to me were a great source of attraction. The Chinese Hibiscus seemed to be a universal favorite; also the Oleander. In the garden attached to the residence of the superintendent, I observed quite a number of plants we tend in greenhouses with so much care. Among others I remember the Passion Flower, Poincianas, Datura arborea, in full bloom. In the immediate neighborhood it is swampy land, and in places I saw an Echites growing in abundance that I never saw before. The color was white, slightly tinged with pink, and the plant of a very dwarfish habit of growth. As you proceed on the journey for a few miles, the jungle becomes a perfect mass of Heliconia and Hedychium like plants, vines, palms, and other things I could not make out, owing to the rapidity of travel. Farther on the land becomes

more elevated and hilly with mountains in the distance, and the vegetation changes somewhat in character. Several other species of palm make their appearance; the Lignum Vitæ tree grows abundantly, and being in full flower, looked like immense bouquets. In the distance I saw a tree covered with blue flowers, that I took to be a Jacaranda, but it was too far off to judge correctly, it was very beautiful, however.

As all things have an end, so had this journey, and in the dusk of the evening we were making our way over the Bay of Panama to the Pacific stream. Unfortunately, it soon grew so dark we could distinguish nothing of the beauties of the Bay. The climate here is rather a peculiar one, and judging from the success attending the cultivation of New Holland plants, must be something similar to that climate. Acacia lophantha is universally planted, but last winter proved a little too severe for it, and many were killed or permanently injured. Several species Eucalyptus are also much planted, and grow to good sized trees, not unlike at a distance to the weeping willow. Acacia longifolia, and A. undulata (you know the species I mean, so commonly grown about New York) also do finely. Also Veronica speciosa, Calla æthiopica, Abutilon striatum, the older and more rugged varieties of Fuchsias, Schinus mollis, Pittosporum Clianthus punicea and some few others of similar nature. When I first arrived, the Clianthus were in full bloom, and made a splendid show; the Ceanothus also is much cultivated, although growing wild in many places on the surrounding hills, and looked very charming. A species of Mallow is extensively planted, and the Euonymus Japonica is found in every garden, together with Chinese Arborvitæ, Oriental Cypress and two species of native Junipers (I. Lambertiana, and one other,) and these together with Roses constitute about all in common use. I have not found any Camellias planted out, although I am informed there are some, and those I see in the green houses of the trade present rather a shabby appearance. I think the difficulty is altogether in bad treatment, as I cannot imagine the climate unfavorable. Roses do remarkably well, and are planted in great abundance. Lamarques, Cloth of Gold, Safrana and all established sorts are to be seen growing in the greatest luxuriance. I have made several visits to the Commercial Gardens in the neighborhood, and from what I have observed, together with what I have been told, I don't think the business is in a very flourishing condition. Most of the gardens are kept by Frenchmen, at a place called the Mission; a low, damp, sandy spot, about three miles from the city. There is a garden kept by a Mr. Walker, close into the city, who has quite a lot of houses, and has got together a number of rare New Zealand and New Holland plants, also some Japanese rarities. He has quite a stock of Dacrydiums, and Aruacarias. I found him very courteous and agreeable; he showed me all around his place, and I intend to go out again and have another look. Mr. Walker complains that the business is not as prosperous as formerly, owing to its being overdone. I stepped into an auction room the other day where they were selling plants, and found them going off quite as cheaply as in New York. At another time I saw them selling some very large roses in tubs, which brought very good prices; so I judge as with us, size often takes the place of merit. There are *very few* private green houses, and consequently the demand is pretty much for hardy plants and bouquets; these last selling about the streets and hotels at New York prices. One of the greatest drawbacks to a person commencing business here, would be the difficulty of getting a suitable piece of ground near enough the city. In its immediate vicinity it is nothing but sand hills; the land seems to be excellent when cultivated. I have been thus particular on this subject because I know you have had some inclinations this way, and would not have your expectations raised too high. To sum up the matter in a few words, I think a florist is but an indifferent occupation here at present. I have two excursions in the country, aside from rambles around Oakland on the other side of the Bay, the first time to San Jose and the New Almaden quicksilver mines, and next to the "big trees," as they are called here, in Calaveras county. I was delighted with my trip to the mines, and a fine view of this celebrated valley (Santa Clara.) It is very wide, ten or twelve miles I should say, in the widest part, and as level as a prairie. The soil is a deep, black, unctuous loam, and when dry, very hard, and fissures all over the surface. It seemed to me to be very wet, but this has been an unusual season here; the whole was inundated, and the whole lower part of the valley covered with water. It was astonishing to me to see how vigorously the grape vines grew in this soil. Pears, Plums, Apples, and Apricots do exceedingly well, especially the latter; indeed the Apricot is one of the fruits of the country. Peaches and Nectarines all had the curl badly, owing I suppose to the injury done the roots by the water and the cold backward season; they appeared to be recovering, however. To me it was a novelty to see all these fruits with

Figs all growing together luxuriantly. My journey to the big trees was rather a tiresome one, as you have to ride from Stockton, which you reach by steamboat, seventy-five miles in stage coach over a dusty, and in some parts rough, road, occupying 13½ hours, and after that at Murphy's, the end of the stage route, you take a private conveyance fifteen miles farther on. I was much pleased with the whole journey, as it enabled me to see some of the country and mining operations. The whole country until you reach the mountains is sparsely wooded; the evergreen oak, a low-headed tree, being almost the only tree. When you begin to ascend the mountains, you first meet with the Pinus Sabiniana, or Nut Pine, as it is called here. I was considerably disappointed in this, as it does not attain any great size, and although very pretty when young, yet when it attains its size, it lacks massiveness, and does not strike you as possessing character, so to speak. As you ascend still higher you meet with P. Benthamiana interspersed with P. Lambertiana, or Sugar Pine, and Thuja Craigiana. Of the last I saw several splendid specimens 75 to 100 feet high, well furnished from the base. It is a beautiful tree, and to be regretted not hardier than it has proved. P. Benthamiana grows very plentifully and attains a very large size: some I passed on the road had been measured by other travellers, and were marked as about eight feet in diameter. The branches do not extend to a great distance laterally, and accordingly the tree loses in effectiveness; it is however very tall and symmetrical. The mountains are not generally densely covered with timber, but the trees are rather regularly dispersed at considerable distances from each other. In the "big tree grove" the trees are closer together than anywhere else that I observed, and in addition to those already mentioned, there was a very beautiful Silver Fir, unknown to me, although I think I have seen it at Parson's. I looked for some seed, or even a cone, but could not find any. From having seen views and heard repeated descriptions, together with having seen the bark of one exhibited at the Crystal Palace, I was somewhat prepared to see the "big trees," and there they stood in all their grandeur. As you know all about them as well as I do, I shall not attempt any description. One of the largest was blown down last winter, and in its prostrate condition you can't but feel a regret that the elements dealt so rudely with the giant in his old days, after withstanding their fury for centuries. The most beautiful shrub I have seen is an Æsculus, (Æ. Californica,) which grows along the water courses principally. Its habit is that of Pavia macrostachya, only of a much longer growth; perhaps might be called a small tree. It is just now coming in bloom, and is covered all over with spikes of white flowers to the ground, rendering it as lovely an object as you ever saw. I suppose Parsons or some of the others have it—perhaps it is not hardy.

EVILS OF LAWN MOWING MACHINES.

BY Q. E. D.

My lawn was originally made up by sowing with perennial rye grass. For a few years afterwards circumstances did not permit me to pay great attention to it, and it was cut but twice a year, except just by the edges of the drive. It has, during the last four years, been cut regularly by the scythe, perhaps five times a year—never being permitted to grow but a few inches long. When I commenced on this close mowing plan, white clover was only here and there growing; but now it has spread over, and formed a close carpet all over the lawn. I don't dislike this—on the contrary am rather proud of my lawn, in which I have nothing but the white clover and the rye grass.

Your opinion about small creeping plants having a chance to grow when the long grass is kept down, is confirmed by my clover experience, and I would suggest, instead of the methods you propose for eradicating the annoying weeds complained of in closely mowed lawns, that those who do not object to white clover, sow it thickly over their lawns, I think it will crowd out every other objectionable weed.

WANTED--A WORK ON SHRUBS.

BY A RURAL NEW-YORKER.

It is with the utmost diffidence that I approach you, Mr. Editor. An honest man, who, by some woundrous chance, discovers himself among a nest of President-makers, could not be more surprised than I am at my daring feat of casting my shadow on the threshhold of your sanctum.

And what can you do for me?

A great deal, a very great deal, indeed.

But first look upon me as a man well advanced in years, if not in wisdom, who has retired, and after a rather active life, now enjoys his *otium cum dignitate*, that is, as Puddle-head translated for me the other day, who enjoys his "oats with dignity."

That dignity I understood to consist in raising farm and garden crops, and so I took to it. I would not, however, carry that dignity as far as my

neighbor X, who plowed up the lawn before his place and planted it (two acres and over) in potatoes; nor as my neighbor XX, who sowed on *his* lawn apple seed, and now revels in the prospect—probably a very remote one—of turning a large extra penny, by peddling out apple trees and underselling the nurserymen of the neighborhood. Such practice, Mr. Editor, I scorn. I can't hit just now on any proper quotation from the Latin or Sanscrit—you may supply it, if you so please—but what I want to convey to you is my opinion, that it is base to worship the Almighty Dollar, and cultivate idem when your bins and your barn, and your cellar are full, and when your mental barn still shows pretty empty corners.

Unaccustomed as I am to writing editorials, (is not that the word for writing to Editors?), I am afraid I am not concise enough—or is it *precise*? never mind, Mr. Editor, you know what I mean. What I want to say is this: If you can afford it, you must have some pleasure-ground and something of a garden. Accordingly I was determined to have one. My wife and my eldest daughter—never mind their names—have very correct notions of taste. Everybody says so, besides myself. As additional proof of it, I mention that we take the *Gardener's Monthly*, and that we swear by you.

So, for instance, I had determined to have in the garden chiefly dwarf trees,—apples and pears and cherries, with a judicious quantity of peaches,—all neatly set out in rows, again in circles, again in quicknunx, (I believe that's it), so as to form beds and walks, etc., etc. But you, Mr. Editor, had recommended Shrubs as being the chief thing for a small garden, and my wife and Betsy, my eldest daughter, said it was to be shrubbery and nothing else.

Now comes the trouble. We went all three to—never mind his name—who keeps the nurseries, and wanted to select the shrubs. It was in the latter end of March. Not a leaf was there on any thing growing yet. How were we to select? There we stood, staring our difficulty in the face. Mr. ——, the nurseryman, suggested that we might leave the assortment to him. Gracious! said my wife. Goodness! echoed my daughter. How can we be sure, they joined in chorus, to be suited?

Then leave it to your gardener, again threw out Mr. ——, the nurseryman. *Your* gardener! *Our* gardener! We had no particular gardener, and would not have one. Was I to leave the planting to Patrick O'Donoghue, without risking to have my garden done in the Irish taste; or to Andrew MacNochan, without ditto, ditto, Scotch?

At this critical juncture, Mr. Editor, I advanced to the front. Show us, said I to Mr. ——, the nurseryman, some books wherein, said I, we can see the shrubs, lithographed, woodcutted, photographed, colored or not colored, all the same so we can see what they look like, and decide for ourselves. Also, said I, where we can read about their size, their flowering-time and all their belongings.

Such proposal, Mr. Editor, you will acknowledge was fair and square. But, you will hardly believe it, Mr. ——, the nurseryman, smiled at it in rather a supercilous sort of a way, and told us there was no such book or books in print.

If we did not live in a little out-of-the-way kind of place, I would not trouble you, Mr. Editor; and I repeat, I approach you on the subject with very great diffidence. But won't you be good enough to send me such a book for perusal, or tell me where I can buy it, and how I shall ask for it, for I am not to be shaken in my resolution; and my family and myself have determined to rather let the planting time go by than go it blind. But we want to plant now,—this fall—and any information of yours will be kindly received.

[No wonder our "New-Yorker" was diffident in essaying to present his "Editorial." He has laid on the butter, and applied the saccharine matter pretty freely; but the wormwood is so illy concealed, that no wonder he trembled as he wrote. To be sure, *we* have said on several occasions, that we know of no practical work on shrubs adapted to the wants of our readers, and our merry correspondent is disposed to be witty at *our* expense. Talk about his Latin quotation! Imagine Juvenal begging help of his shadow, or Sydney Smith and the "Drab-coated men" at the same desk, dressing up "repudiation," and you have our thoughts.

Well, though the "Rural," &c., has laid a trap for us, we conclude to let it go by to the printer. It may catch somebody yet, and if it ever do result in bringing forth that "book on Shrubs," we are quite sure neither we nor our readers will be sorry. And yet, after all, whether in books or national songs, it is seldom they do well when coaxed out or made to order. Should the Spirit of Flora move some favored mortal, a real book may come. We hope it may.—Ed.]

REMEDY AGAINST CUT WORM.

BY MR. J. M. FINCH, DALLAS, ILL.

My plan of guarding against the cut cut worm is, to wrap a hickory leaf around the stalk of the plant to be set, just above the roots, winding the leaf tight low down and allowing the upper part

flare out, forming a funnel around and extending above the lower leaves of the plants. By the time the plant grows to be out of danger, the leaf decays and forms manure for the roots. I can save every plant planted thus, and it costs nothing.

THE STRAWBERRY WORM.

BY MR. D. TOWSE, NEAR PITTSBURG, PA.

THE Strawberry worm, complained of by a subscriber in the December number of 1860, is common here but only on highly manured ground. Our remedy is to send in the evening about two hours before dark, enough children to go over the whole patch, each with a tin-cup to put them in, and pick them off by hand. Repeat three or four times and you will be clear at a probable cost of $2 per acre, that is if your plants are in rows on hills.

NEW JAPANESE PLANTS.

BY MR. F. PARKMAN, JAMAICA PLAIN, MASS.

Among a collection of new Japan plants, brought to this country last year by a gentleman of Boston, and now in my hands, are several new varieties of Lily. One of these has just flowered, and proves to be of a character most striking, and as I believe, unique. It is of the lancifolium species, but far larger than any variety hitherto known. The bud, shaped like the beak of a stork, measured six and three-quarters inches five days before the flower opened. Since that time it may possibly have lengthened to seven inches. The Corolla differs much in form from any of the kindred varieties with which I am acquainted. The lower portion is bell-shaped, but towards the tops the petals are strongly revolute. It may be described as intermediate in shape between L. japonicum and L. lancifolium. The width of the Corolla, measured with compasses, is eight inches. If the petals were straightened, it would exceed a foot. The ground color is white, marked with numerous dots or studs of a deep purplish brown; while along the rib of each petal runs a line of bright orange, shading imperceptibly into the pure white. The solitary flower is borne on a stem about two and half feet high. I have three others in bud, but this seems likely to prove the largest. Other varieties are also coming on. The gigantic stranger is at present sitting for his portrait, with directions to reproduce him of the exact size and coloring of life. If the artist succeeds, I will send you a copy.

[We believe no person in this country is better acquainted with Japanese plants, than our correspondent's neighbor, Professor Asa Gray; and we would suggest that specimens of Mr. P.'s Japan plants be sent to him, and their proper names established. Their novelty or otherwise would then be authoritatively ascertained, and our readers know exactly the nature of the plants referred to. We congratulate Mr. P. on his good fortune.—ED.]

REJECTED STRAWBERRIES.

BY A FRAGARIAN.

THE American Pomological Society reported and published Rejected Lists of such varieties of Fruit as they deemed unworthy of culture. These will be found in the volumes of their "Proceedings," and comprise 75 varieties of Strawberries. Some others have been rejected since. The following summary will serve as a guide to those who are not fully informed on the subject. They have been rejected for unproductiveness, small size, or lack of sweetness or flavor, or for tenderness of the plants:

Adair, Admiral Dundas, Alice Maud, Amazone, Athlete.

Bishop's Orange, Blake's Incomparable, Black Prince, Brighton Pine, British Queen, Britannia, Boyden's Mammoth, Brook's Prolific, Buist's Prize, Burr's Columbus, Burr's Seedling, Bartlett.

Captain Cook, Climax Scarlet, Cole's Prolific, Comte de Paris, Comtesse de Marne, Cremont Perpetual, Crimson Globe, Cushing, Cuthill's Black Prince, Chester, Comte de Flandres, Chorlton's Prolific, Charles' Favorite.

Delices d'Automne, Downton, Duc de Brabant, Deptford Pine, Durfee's Seedling, Dutchess, Dundee, Dundas.

Early May, Eberlein, Elton, Excellente, Exhibition, English May Queen.

Fillbasket.

General Havelock, Genesee, Germantown, Glen Albin, Golded Seeded.

Haarlem Orange, Honneur de Belgique, Hooper's Seedling.

Ingram's Prince of Wales, Improved Black Prince.

Jenny's Seedling, Jessie Read.

La Perle. Kentucky Seedling.

Lizzie Randolph, Lucy Fitch.

Magnum Bonum, Marilandica, Methven Castle, Merveille, Myatt's Eliza, Moyamensing, Monroe Scarlet, Myatt's Prolific, Madame Louesse.

Ne Plus Ultra, Newport, Nicholson's Superb and Ajax, Nimrod. Ohio Mammoth, Omar Pacha.

Pennsylvanica, Princess Alice, Princess Royal (Cuthill's), Prince of Wales, Peabody.

Rival Queen, Richardson's Cambridge, Rival Hudson, Robinson's Perfection, Ruby, Reine Hortense, Rhode Island.

Scarlet Cone, Scarlet Nonpareil, Schneike's Pistillate, Scott's Seedling, Schiller, Sir Charles Napier, Sir Adair, Sir Harry, Sterling Castle Pine, Swainstone, Trollope's Victoria, Walker, Western Queen.

[Lists of rejected Strawberries are useful. Many of them in this list are "good," but this is a poor recommendation. If the thousands of dollars annually spent on "New Seedlings," that afterwards grace only "rejected lists," were spent on a National Experimental Garden, what vast benefit would result to all. The "rejected lists" we hope will be still more enlarged at the next Pomological meeting.—Ed.]

INSECTS ON THE OSAGE ORANGE.

BY D. DICKINSON, CAMDEN, N. J.

I have an Osage Orange hedge which was afflicted with the same "cottony, flossy turtle insect," with its myriads of egg-like grains, spreading its "wool-like progeny rapidly, as is described in the May number of the *Monthly*. Last fall I arrested their progress by applying simple mackerel fish pickle, after the fall of the leaf, and a softening rain. The work was easily done, with a sponge strongly fastened to an old broom-stick, and worked in various directions until they were all rubbed off. My hedge is now in good health and beauty, as can be seen at my place in Camden, New Jersey.

[We are inclined to think this a very useful hint. It is very probable a solution of brine would not injure the hard bark of trees in the winter; and, if mats or other material could be placed under the trees to prevent saturation, no doubt the syringe might be employed. Try it *cautiously*.—Ed.]

ARE PISTILLATE STRAWBERRIES PROLIFIC?

BY FRANCIS BRILL, NEWARK, N. J.

Having obtained the special premium of $10, for the best "Seedling Strawberry" (since named General McClellan), from the Brooklyn Horticultural Society at the late exhibition. Some have sought to depreciate the variety, from the fact of its being pistillate, and go so far as to say that a pistillate Strawberry is unproductive.

When I arrived home, I took the trouble to count the stalks on twelve plants of the "Newark Prolific," planted last September, and found thereon upwards of two-hundred and fifty stalks, bearing over one thousand fine berries; the first of them just beginning to ripen, while the most of my other varieties are about done.

[It is usually placed to the credit of pistillate Strawberries that, when properly fertilized by staminates, they are more productive than hermaphrodites. This, besides being an observed fact, would seem to be reasonable, on the principle of a "division of labor," which some botanists believe to be a constant tendency in plants once hermaphrodite, eventually becoming of the class which has the sexes separate in different plants.

The necessity of having fertilizers planted with pistillates, is the only ground of objection to them. Of two kinds, in every respect equal, the preference would be given to the hermaphrodite over the pistillate.—Ed.]

NOTE ON THE VENTILATION OF GRAPERIES.

BY WILLIAM SAUNDERS, GERMANTOWN, PA.

It is now very generally conceded by Grape-growers, that the admission of air at the lower portion of a grape house at certain seasons of the year, will encourage mildew; and many grapehouses are now constructed unprovided with means for bottom ventilation. Acting upon the theory that the Erysiphe mildew of the grape is induced by currents of dry air coming in contact with the foliage, front ventilation is carefully avoided, and with advantage, so far as that malady is concerned.

As auxiliaries in keeping down the temperature during hot weather, the absence of front ventilators is sometimes severely felt, entailing more than ordinary care in keeping the house saturated with moisture. When I first drew the attention of grape-growers to the cause of this mildew, and proposed to build graperies without any allowance for bottom ventilation, it was urged as an objection, that the temperature could not then be kept sufficiently low, and by way of compromise, the ventilator at top was increased. Still there are times when low ventilation is of benefit, and if it could be rendered available at all seasons, it would materially tend to simplify the general management of the house.

Profiting by the suggestions of Dr. Jack, in his valuable remarks on keeping parlor plants, I propose to introduce a similar arrangement, with a view to render front ventilation admissable, without incurring risk of injury. It will be recollected that in order to render the atmosphere humid Dr. Jack passes the air, as it enters his plant case, through a netted cloth, kept constantly saturated with water

by capillary attraction.

Here we have a suggestion of great value, and we may avail ourselves of using bottom ventilation, by covering the opening with a wet cloth, as alluded to above. Of course there are various modes of providing the proper appliances for the saturation of the cloth. I have had a very efficient arrangement put at work on a house having a wide gutter for the removal of rains; the conveying pipe is stopped up, and the gutter filled with water, the edge of the cloth is tacked to the gutter and it falls down and entirely covers the opening through which the air passes.

I think the matter of sufficient moment to deserve special recognition in the planning of Exotic graperies.

PETER LEGAUX.

BY PROF. J. B. KIRTLAND, CLEVELAND, OHIO.

Enquiries in regard to the late Peter Legaux were contained in a recent number of the *Gardener's Monthly*. If they have not been fully answered, allow me to add, that while a Student of Medicine in Philadelphia, in the year 1814, Bernard McMahon, the author of the "American Gardener's Calendar," often spoke of Mr. Legaux as a successful Vine cultivator. In the edition of that work published in 1806, both Legaux and his Vineyard are repeatedly referred to, and it is my impression that the directions for cultivating the Grape contained in that publication, were derived mainly from Legaux. "The Vine-Dresser's Guide," published in the year 1826, by J. J. Dufour, of Vevay, Indiana, also contains many references to Legaux and his Vineyard. The latter was repeatedly visited by this author between the years 1796 and 1806. Many interesting facts in relation to the early cultivation of the Grape in the United States are furnished in the second chapter of this work.

"Rural Economy," which was published at New Brunswick, in the year 1806, by S. W. Johnson, contains an article of 40 pages "On the Culture of the Grape." It seems to have been made up in a great measure of the observations and experiences of Peter Legaux, and closes with a "Table of *Botanico-Meteorological Observations*," made by him at Spring Mill for fourteen years, from 1787 to 1801 inclusive.

On examining the three above-named works, the query is suggested, whether the Delaware Grape, introduced into Delaware, Ohio, might not have been one of Peter Legaux's importations from either the Cape of Good Hope or Europe? At that day several Vineyards of Foreign Grapes were cultivated in New Jersey as well as in Pennsylvania.

GRAPE GRAFTING AND FRUIT GROWING IN MISSOURI.

BY J. M. SMITH, POTOSI, MO.

Seeing that the propagation of grapes still occupies attention, I will give my experience in grafting the present season.

Last fall I procured cuttings of some fifteen varieties—of some varieties only one or two eyes—and buried them in the ground until last spring. On taking them up, I found a considerable portion of them in a fair state of preservation, although most of them were cut from one or two year old vines, (small at that), and from very small, hardly ripened wood. I constructed a common, though very good hotbed, putting on the manure about eight inches of leaf mould from the woods. I then went to the woods and dug a lot of roots of wild summer and winter grape roots, (*Vitis æstivalis* and *V. cordifolia*), mixing them indiscriminately,—the roots being taken from where the vines naturally layered themselves, and were young and tender. I then took my cuttings, and, where I could, cut them to two eyes each, one at the top and one at the heel.

Then, with the common "cleft" method, inserted the cutting into the root, letting the lower bud project from the place of union, and tying the graft with old "gunny" or manilla, so as to allow it to rot off as the graft grew. I used no wax at all. I then planted my grafts directly into the hotbed, using no pans or boxes. When they had been there about six weeks, some of them had grown four inches in height. I then, selecting a cloudy, drizzly day, transplanted my grapes into the open ground; and they were hardly checked by the removal. A very few did not succeed; but I am very confident it was on account of the poor quality of the cuttings. The Delawares all grew finely, so did the others: Concord, Cuyahoga, Rebecca, Diana, Taylor's Bullitt, Northern Muscadine, Hyde's Eliza, Isabella, Catawba, etc., except Mead's Seedling and Clinton. The former did poorly, being poor wood; and the latter would not unite at all. Among the successful I had two eyes each of White Frontignan and a Muscat, all of which "took" agreeably, and are growing finely.

About a month ago we had a terrific hail-storm, which broke my vines very badly, breaking the shoots of some entirely off; but most of these threw up a new shoot from the eye, at the union of scion and stock, and are now making fine headway. At

this writing, notwithstanding the hail, some of my grape grafts have grown a foot to eighteen inches, and all doing as well as I could possibly expect.

Not intending to write more than one page upon my experiment in Grape-grafting, but having run over to another, I will finish my espistle on another "scrap." And, while upon the theme, I will give you a little gossip *Horticulturally.*

In the first place, there is no place in the West where fruit of all kinds belonging to the temperate regions of our country, appear more at home than in this "mineral region" of Missouri. And at the same time it is strange that so *very* little progress has been made in horticulture. It is true there are some fine orchards, but they are rare. "Pear blight," "grape rot," "peach failure," and kindred complaints, are among the rare occurrences. I have not seen a single pear tree that has any appearance of ever having been affected by blight; and many year trees, some quite old, are scattered through this section. Grape-vines, where there are any, are heavily loaded with splendid looking fruit. Peach trees loaded to the ground with velvet-cheeked fruit. True, upon some situations in this neighborhood, and particularly in the town of Potosi, peaches are a failure; but only a pleasant walk will bring us to where the blushing fruit hangs languidly upon the wealth laden branches. The Peach,—the Queen of all fruits,—how the mouth waters at even the name! And then,—peaches and cream,—what could we use to supply the place were there no such luxury? We can better dispense with *cotton*, than with fruit. And, as the rebellious portion of our country have chosen to nominate and proclaim Cotton to be *King*, we, as Democrats, Republicans,—disclaiming all attachment to royalty,—name Ceres and Pomona as our *elected* governors. While "King Cotton" rules with an iron rod,—yea, an *iron chain*,—our *servants*, the mild sisters, Ceres and Pomona,—do the will of the *sovereign people*; proving the Rulers to be the servants of the ruled.

I belive I did not tell you of a "big" days work I did last winter in the grafting line. While I was engaged with Mr. Wm. Sigerson, of the St. Charles Nursery, Mr. Colman, Editor of the *Valley Farmer*, at St. Louis, and an extensive nurseryman, was rather boasting of the work of his foreman in grafting; saying that he could set 3,500 root grafts in a day, if all things were prepared. Now I like to be *aut Cæsar aut nullus*; and really striving to be the former, I am generally the latter. But in this one case I proposed setting 4,000, and *I did it!* doing all the work except washing the roots. I commenced at seven o'clock in the morning, quit half an hour for breakfast, about an hour at dinner, rested about half an hour in the evening, and finished 4, 001 as the clock struck seven at night. Who can beat that?

THE PEACH TREE BORER.

BY WALTER ELDER, PHILADELPHIA.

As your correspondents are furnishing you with ideas how to prevent the ravages of the Peach Tree Borer, I may relate an incident which has come under my notice this year. A gentleman of this city, immediately south of the navy yard, has a small orchard of peach, pear, plum, quince, nectarine and apricot trees; twenty of the peach trees are growing upon sod and a circle dug around their stems eighteen all around, a little over three feet in diameter; and six peach and three nectarine trees are growing upon a strawberry border. For the past three years the borer attacked them in June and September; but the grubs were taken out young, the trees upon the grass-plot were worst attacked, four grubs in each. Last spring a clucking hen was set in a box to hatch, close to the grass-plot; and after her brood came out and got strong enough she led them to the peach trees to scratch in the dug circles around them; they went over every tree each day, and deeply they did scratch, and in searching for the borer's grub early in June two were found in each of the peach and nectarine trees on the strawberry border; but not one was in all the trees upon the sod; nor the mark of them, not even a speck of gum was visible upon them. Now it is well known that hens catch insects on the wing; and it may be, that while the Borer was reconnoitering around the trees, to see where he could most effectually make the attack, the hen might catch him. Or it may be that he seeing such a formidable enemy entrenched, it would be sure annihilation for him to make the assault, and wisdom being the best part of valor in such a case, he prudently withdrew. Now after all the experiments and schemes that have been thought of, to ward off the Borer; it will be a little surprising if a clucking hen with brood should prove to be the effectual one. Let others try the experiment, by sodding down their peach orchards with grass and dig three feet circles around the stems of the trees, and station clucking hens as guards at proper distances, and the result will speak for itself; a hen that raises a young brood in the usual time, and saves twenty peach trees from the borer is worth keeping.

PLUM KNOT.

T. T. S., DANSVILLE, N. Y.

I have made the Plum Knot a matter of quite a good deal of observation, and in doing so have run against one fact that I will communicate, in hope that it will be made good use of by some intelligent reader of the *Gardener's Monthly.*

I have noticed it to be an almost invariable fact, that in the nursery rows the Plum Knot appears upon the NORTH side of the tree. I do not know that this fact proves anything, unless it may go to show that it is the mark of an insect, and that it chooses the tender side of the tree to operate upon. I make this merely as a suggestion, hoping some one will follow it up.

In almost all cases a small white grub is found in the knot. Will you tell me Mr. Meehan what this grub comes to? does it produce a fly? if so, what kind of a one? In what manner can I find out what shape this grub will assume?

[Many different insects have been raised from larvæ found in the Plum Knot. The Peach borer, and the Plum curculio are very frequently found.—In other galls, but one insect is found, very evidently the one that formed it. The fact of so many species being found in the Plum Knot, would seem to indicate that they instinctively feel they have as good a right to the knot as the curculio: though the cuckoo does seize the sparrow's nest sometimes.

In company with Mr. E. Tatnall, jr., of Wilmington, to-day, (July 16,) the writer examined some knots just bursting through the *trunks* of some cherry trees. The curculio has disappeared some weeks ago, and the knots are coming through on the south side exposed to the full sun; on the north besides the natural shade is a dense thicket of other trees.—ED.]

CROPS AT SPRINGFIELD, MISSOURI.

BY "SPRINGFIELD."

I have just this day received the back numbers of your valuable Journal for the current year, for which I indeed feel much gratified; please accept my grateful acknowledgement.

The spring with us was very favorable to the fruit crop; but other crops have suffered much from drought. Have not had a good rain *here*, since first of April, though our neighbors a short distance either way from us have had fine rains, and crops look well. Many farms are left desolate, orchards turned out to the commons a fearful comment upon the vanity of life.

Our people have been kept in a perfect fever of excitement by existing circumstances, so that what little of enterprise and energy was left in us has been stifled for the time being; so that upon the whole we are loosing ground rapidly in agricultural and horticultural matters.

Wheat crop harvested in fine condition and of good quality but small quantity; oats a failure here; potatoes not much better *so* far; corn (like all other crops,) planted late though fear of further disturbance, but looks well; peaches and apples fine. But I have already occupied too much space. Farewell, and may you live long to prosecute the glorious work of reform.

[It is sad to reflect on the enormous losses to Horticulture and Agriculture arising from the rebellion. We believe no class, taken collectively, endeavored to avert the strife more energetically than ours; and, though suffering in common with others, have less to answer for. From our position, in correspondence with so many different sources, we may say of our own knowledge, that up to the actual breaking out of the war, with few exceptions, the great body of Southern Horticulturists were opposed to secession, not but they had their differing views as to the abstract justice of the doctrine, or as to the advantages which a separate independence might or might not bring with it; but solely because they saw that the assertion of the doctrine would inevitably lead to a bloody and disastrous struggle, which would render any ultimate success, by far too dearly bought.

It is pleasant to dwell on this power of Horticulture to restrain rash passion; and it should be a strong inducement with all haters of war, to extend horticultural taste wherever practicable.—ED.]

THE HORNET RASPBERRY.

BY A WEST CHESTER CORRESPONDENT.

THE Hornet beats every thing out of twenty-six varieties we have, both in flavor and size; and equally as productive as any other kind.

[Our printer asks us for a "small communication" to fill up the column devoted to this department, and we take the liberty of publishing the above from a private letter not intended for publication.—ED.]

The Gardener's Monthly.

PHILADELPHIA, AUGUST, 1862.

☞ All Communications for the Editor should be addressed, "Thomas Meehan, Germantown, Philadelphia," and Business Letters directed to "W. G. P. Brinckloe, Box 406 Philadelphia."

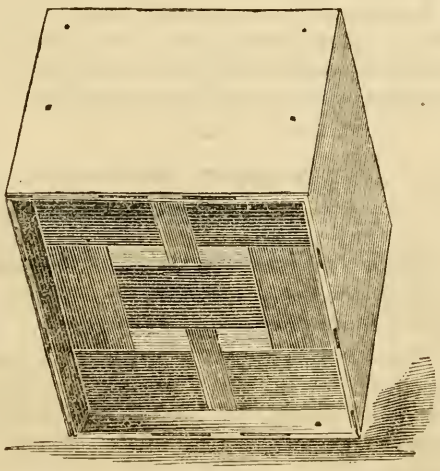
☞ Persons sending two new Subscribers for 1862 in addition to their own, with $3.00, can receive a copy of our First Volume, (1859) free. All persons who have paid their subscriptions for 1862, by sending two new Subscribers and $2.00, can receive a copy of the same.

STRAWBERRY BOXES.

Last year we called attention to a great improvement wanted in these articles. We called for a box that could be manufactured so cheaply as to make it no object to the grower to get them back, any more than the paper in which the grocer sends away his provisions. We are glad to find that the suggestion has been acted on. We have before us samples of two kinds,—one made of Willow or Linden; the other of paste-board, varnished over.

In the samples before us, the former has this advantage, in having been tried, it being one taken from a lot in the Philadelphia market,—sent from Pittsburgh, Pa.; the other being a sample sent us by Graham, Emlen & Passmore, for inspection.

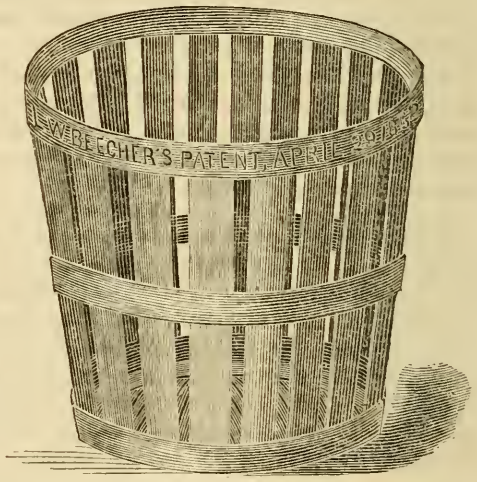
The Pittsburgh box is made, first of one piece of shaving or veneering, about 16 inches long, which is scored in four places, four inches apart, which bends without breaking; and the two overlapping parts are tacked together by four small brads. A strip is tacked along the bottom into which the six small chips forming the bottom are fixed. The cut shows the bottom.



There is one advantage in this box few others possess. The top box, with its elevated bottom, setting over the lower box in the case, permits the fruit to have the appearance of a "full measure," —a very favorable impression in marketing fruit.

The cost of these boxes, including the case for packing the boxes, the whole holding 54 pints and weighing 10 to 12 pounds, is about 80c. at Pittsburg.

The other improvement is Beecher's Patent Basket, made of paste-board, coated with a varnish, of which the following is a sketch:



This explains itself fully, and the cost is about $1 per hundred.

We notice that both of these rival improvements are already in the market, with the fruit of various growers. Which one is the best we will leave time to determine, as both seem to have their peculiar advantages. We will only congratulate the public on the realization of our hopes. Getting back the boxes was an obstacle in many instances to more extensive culture by small growers. Now it will increase, and the community be gainers.

THE NEW DUTIES ON TREES, SEEDS, &c.

Whatever opinions may prevail as to the wisdom of the duty of 30 per cent. placed on the importation of trees, seeds, and roots,—and we have freely and candidly expressed our views on a former occasion—there can be no doubt that the change it will make in many branches of horticultural pursuit will be strongly marked, and it should be an early subject of attention with those whom it may most concern, to prepare themselves accordingly.

Whether it will benefit the citizens of the Union to check importations of trees or seeds, may form the ground for a reasonable difference of opinion; but that importation will be checked by the new duties is an admitted fact, which some will regard with pleasure and others with regret.

In most—we believe all other subjects of tariff levies, the articles are not particularly perishable—trees and plants are. If their importers had no other risk to run, the duty in itself would be a small matter, as many things, evergreen seedlings for instance, with even the 30 per cent. addition, would still be profitable to import. But the risk of importation has always to be counted. A party importing calculates that his goods cost him double on their arrival after paying freight and expenses. After importing a few times, and having some packages arrive on his hands with all the contents dead, he finds that to clear himself on an average of years, he has to regard the actual cost quadrupled on the original price, and hence sells accordingly: so a plant costing 25 cents in Europe he has to sell at $1 to save himself from loss by an average number of years. The additional delays which the necessary custom house business will entail, especially if the present difference between currency and duty paying funds prevails for any length of time, will make losses by importation so numerous and severe, that we regard this branch of the tariff as near a prohibitory measure as may be, and it will be the part of wisdom to prepare ourselves for the consequences.

One of the beneficial results of this fact, will be an increased demand for horticultural skill. With importation closed, those nurserymen who happen to have large capital and little knowledge of the business—who cannot raise evergreens, pears, roses, &c.—but who have depended on importations to maintain their stocks, will now have either to "shut up shop" or buy of those who can, and this newly demanded skill will be called into new channels not perhaps dreamed of at present. One of the most apparent will be the encouragement given to the raising of superior breeds of new fruits and flowers from the stocks now on hand. Apples, pears, peaches, plums, cherries, and some other things we have fortunately already introduced here; and seedlings from these past imported stocks, which by courtesy we call native seedlings, will keep us quite up to, and perhaps in many cases serve us better than any importation we might effect.

But if we are discouraged from introducing any more original stocks from which to produce "native" improvements, we may turn our skill on the improvements in our real natives, and May apples, persimmons, huckleberries and the like receive a share of that encouragement so far bestowed only on grapes, blackberries and Catawissa raspberries; and our prairie roses and other beauties resume that attractiveness which from no improvements having for so long a time been effected in them, one would suppose them to have lost.

So setting aside what might, or should have been, and looking only at that which is, there is much in the present condition of things to encourage the practical man, and to stimulate the study of horticulture as a science, instead of its being as formerly a mere matter of merchandise in which any one might risk his thousands with only the same dollar and cent acuteness necessary for the simplest mercantile transaction. Every evil has some corresponding good,—and whether or not all of us may think the good in this case a sufficient compensation for the evil sent with it,—it is a good which no one who wishes well to horticulture will not sincerely welcome.

Scraps and Queries.

☞Communications for this department must reach the Editor on or before the 10th of the month.

☞The Editor cannot answer letters for this department privately.

Names of Plants.—Correspondents who want plants named should send us better specimens than many do. Perfect flowers and leaves or seed vessels and leaves, with a portion of stem is essential in most cases. If we happen to receive a fragment of anything we have every day under our eyes, it is easy to guess what it is, but in plants from every quarter of the country, greater care is necessary. The specimens should be preserved between thick paper with heavy books or other weight as pressure for a few days, and when forwarded placed between two covers of thick paper to prevent crushing though the mail.

M. D.'s, specimens from Springfield, Mass., were more like a mouse's nest than specimens when we turned them out of the envelope, and the following is the best we can do for him:

1. A barren frond of some sma'l seedling fern, probably of some Osmundia. 2. Probably Lycopodium complanatum. 3, Is Lycopodium inundatum. 4. Some species of Xylophylla, a green house plant. 5. The tip of a flowering shoot, with the

unexpanded buds of what appears to be a white Campanula; but no such white Campanula is a native of "fields" as this is marked, near Springfield, Mass. 6. Is a part of a leaf of Menispermum canadensis. 7. Eupatorium elegans, a green house plant. 8. Perhaps a Relhania of some kind from Australia. 9. A Lilium, probably L. Canadense.

M. C. B., Sandusky, sends four specimens for name without even numbers attached to them, and we do not know how to make replies that would distinguish each plant—one is Clematis flammula, another Clematis glauca, another Wistaria Americana, and the other dried fragment also without flowers, appears to be Wistaria sinensis.

"*Marmont*," *New London, Conn.*—Calopogon pulchellus. Our correspondent says it grows on rocky places in that district, but is fast wearing out, and asks "how can it be cultivated?" Its most natural situation is in wet bogs, and its dry position is probably the cause of its gradual disappearance. To cultivate bog plants, get a pot of soil, half rotten sod, or half coarse moss, in which pot the plants. Set these pots in saucers to be kept always filled with water, and set out in a sunny place. Bog plants soon languish in the shade or confinement of any kind. Our compliments to this correspondent for sending a perfect specimen, giving us no trouble to puzzle out its name.

J. B., Battle Creek, Mich.—Correctly named—Oriental Poppy or Papaver Orientalis of Botanists. Seeds sown as soon as ripe in the open ground, ought to grow without difficulty.

D. R. M., Shiremanstown, Pa.—Spiræa lobata—the Pink Meadow Sweet.

Pear Blight.—"*L.*" writes: "Our Pear trees are blighting badly. Can any thing be done for them besides cutting out the diseased limbs?"

[We suppose Fire blight is referred to, and we know of nothing better than the cutting away process. We have endeavored to form a defensible theory as to the cause, and are strongly inclined to the opinion that it is the result of previous disease, first given to the system by high and inordinate manuring. If so, a gradual return to more moderate manuring would be a good addition to the pruning operation.

Treatment of Caladiums—*N., near West-Chester, Pa.*—It is natural for these to go to rest at some seasons, when the leaves will gradually die away. If they be in a very high temperature, they will sometimes retain their leaves through the season. When they show symptoms of resting, gradually withhold water, but never keep them entirely dry. When they appear to be growing, shift into other pots.

They are propagated by offsetts, which they only make after growing freely. Grow well one year, and it will probably afford you a chance of increase next.

Flowering of the Pomegranate—*H., Philadelphia.*—"I have a Pomegranate which I planted from a slip five years ago, which has grown finely, but to this time has never produced flowers. Can you give the reason for this?"

[The "growing finely" is the secret. No tree flowers well till it has exhausted its "fine" growth. To hasten its flowering, suffer the pot or tub to become full of roots, and let it grow in the full sun. It will no doubt flower well next year.

Insects—*J. R. T., Ellicott's Mills, Md.*—The box contains larvæ of the Rose bug (Melolontha), of which there are several species. The best plan is to destory the bug by hand picking, or shaking into a vessel of water. The "worms" or larvæ also will be most satisfactorily destroyed in the same way; but you must commence early in the season, before your leaves have been skeletonized to the extent of the specimen you enclosed.

T. H. H., Lancaster, O.—You will find a sketch of the grub you enclosed given at page 151. Its history is at present obscure, it not being described in any standard work. For this, as well as all large caterpillars, the best remedy is hand-picking.

Grape Presses—A "*St. Louis Subscriber.*"—We are not acquainted with "Kindleberger's" press. Of Hikock's and Krauser's, so many favor one and so many the other, that we conclude there is little to choose between them, and either would no doubt answer your purpose of expressing 2000 gallons per annum. If any correspondent knows of a better press, we should be glad of the information.

Communications.—Our contributors have been very liberal with their favors the past few weeks, and several interesting articles are held over till next month.

Books, Catalogues, &c.

The Maine Farmer.

Our readers have been entertained from time to time by the instructive sketches of J. L. B.,

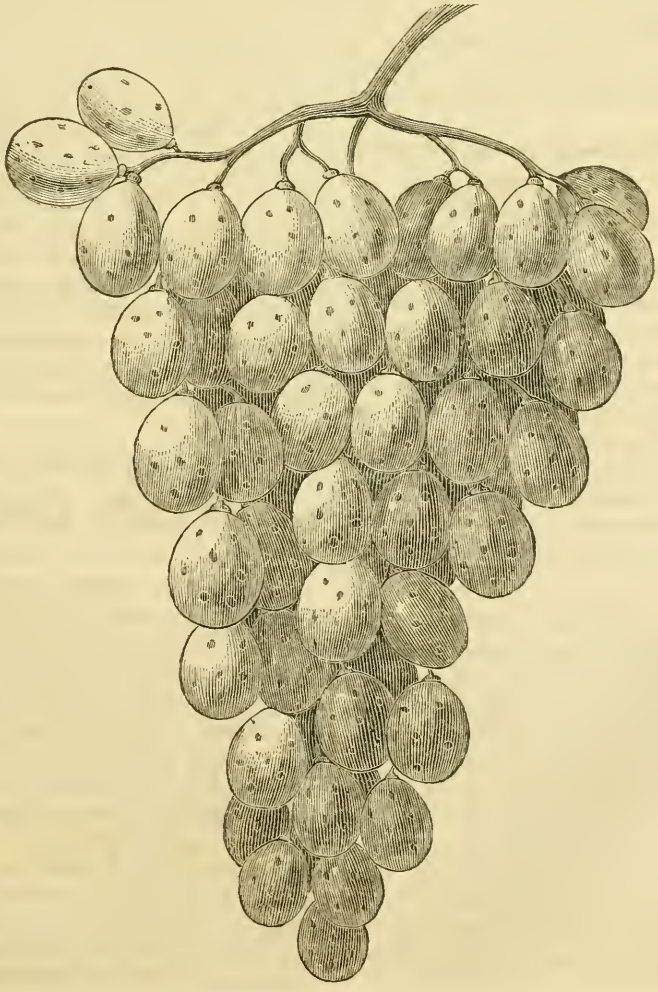
Brookdale Farm, on arboricultural and other rural topics. These were contributed by Mr. Boardman, of South Norridgewock, who we notice with pleasure has been recently associated with Dr. Ezekiel Holmes in the editorship of the *Maine Farmer*.—The *Maine Farmer* already enjoys a favorable reputation for ability amongst its contemporaries; and the adding of such men as Mr. Boardman to its staff shows a determination to sustain its character that ought to tell well on its subscription list.

The Hygienic Teacher and Water Cure Journal, Published Monthly, by Fowler & Wells, New York, now in its XXXIV Volume, we are pleased to find pays considerable attention to Horticulture and Rural affairs. The July number has a full and complete treatise on the propagation and culture of apples, being a Prize Essay of the American Institute, by Mr. L. A. Roberts, and is one of the best summaries of what is known on the subject that we have read.

New and Rare Fruits.

The Bird's Egg Grape.—This a White Speckled Grape, produced by Mr. Wm. H. Read, from seed of "Miller's Calmdale Seedling Grape." It is a grape of singular appearance; berry egg-shape, and strongly marked with dark brown specks like a bird's egg, hence the name. In addition to its curious form the raiser represents it to be of very superior quality.

Our artist has not tapered the berry so much at the stalk end as in the copy sent by Mr. Reid.



New Strawberry—*Russell's Prolific.*—We received some fruit from Mr. Geo. Clapp, but by some mischance they were a week on the way, and of course past our opinion. We notice, however, that it is highly spoken of in many quarters well capable of judging. The following we extract from a recent report of the Fruit Grower's Society of W. N. York:

"A new pistillate seedling, called Russell's Great Prolific, originated by H. Russell, of Seneca Falls, in 1856; very large, four and three-eighths inches in circumference; color bright red; flavor 'very good;' flesh rather firm, juicy, and rich; appears to be very productive, and promises to be valuable. Exhibited by Geo. Clapp, Auburn."

Only one objection has been made, that we have been, by one of our contemporaries, that the fruit is so very heavy it is liable to bear the long stems down to the earth, and become dirty. But those who cultivate in hills, and use straw beneath for protection, as Mr. Knox finds it profitable to do, will, we apprehend, think this no serious fault.

New or Rare Plants.

Pelargoniums.—*Celeste* has "an entirely new shade of color, the lower petals being of a rich orange scarlet, the upper petals deep maroon with a bright scarlet margin, and a clear white centre; altogether a very novel and striking flower." *Mrs. Hoyle*, "a fine light flower, lower petals violet rose, upper petals same color shaded with red, with a small black spot." *Princetta*, "a very beautiful dark flower, upper petals glossy black with a fiery crimson margin; lower petals heavily pencilled with dark red and rose, centre clear white."—*Floral Magazine.*

Cerastium Biebersteinii.—In habit it is more compact and very distinct from *C. tomentosum*, each individual leaf being much larger, and covered on each side with a dense silvery-white woolly substance, resembling that on the beautiful Salvia patula argentea; this, and the flowers which are also much larger, renders the plant far more striking than C. tomentosum; indeed, when placed side by side, the latter has a dull appearance.

It is perfectly hardy, and maintains its lovely white appearance, even in mid-winter, so that it must prove a valuable acquisition to our winter gardens, when planted in contrast with other things.—*Gard. Chronicle.*

Alocasia macrorhisa variegata, Hooker.—A variegated plant of noble aspect, with handsome Caladium-like foliage of a pale green color, marked with bold yet irregular blotches of white. It is of vigorous growth, and is a great addition to our variegated stove plants.

Caladium Veitchii, Lindley.—This is a magnificent plant, and its peculiar form and great beauty are striking. Its large sagittate leaves are of a rich bronzy green on the upper side, and a deep purple on the under, with a beautiful metallic lustre, and of an extraordinary substance. It is one of the finest ornamental plants ever introduced, and one which has only to be seen to be admired.

Ficus Cooperi, Veitch.—This very distinct and beautiful foliaged greenhouse plant was brought from New South Wales, by Sir Daniel Cooper, after whom it is named. It is of free and vigorous growth, with large dark green glossy leaves, and the veins, which are prominent, are of a deep crimson color. This plant is a desirable addition to the class of ornamental foliaged plants, and it will prove of equal utility for room or conservatory decoration with the well known Ficus elastica.

Nepenthes Dominiana, Veitch.—This, the first hybrid Nepenthes ever raised, was produced at the Exeter Nursery, by the foreman, Mr. Dominy, between N. Rafflesiana and an imported unnamed species with green colored pitchers. It partakes of the strong robust habit of N. Rafflesiana, having pitchers intermediate between the two parents.

Domestic Intelligence.

OBITUARY.

B. A. Fahnestock, Esq., one of the Vice-Presidents of the Pennsylvania Horticultural Society, died on the 18th of July, aged 63 years. He was principal in one of the leading Drug houses of Philadelphia; and as an active member of the Pennsylvania Horticultural Society, was widely known and highly esteemed. His collection of rare plants is probably the most valuable in the Union, and his liberality in allowing the friends of Horticulture to see his collections, frequently afforded us opportunities of seeing extremely rare and valuable plants, we should otherwise know only by reputation, as existing in the princely gardens of Europe.

In common with the Horticultural Society, and

his large circle of friends, we sincerely deplore his loss.

Mr. A. Saul, of Newburg.—We are sorry to learn of the death of this well-known horticulturist. As partner in the firm of A. J. Downing & Co., Mr. Saul became widely known; and as the active man in the nursery branch, caused the Newburg Nurseries to reach a distinguished position in the trade. When the firm was dissolved by the withdrawal of Mr. Downing, Mr. Saul occupied the position of head of the firm, and, we believe nearly entire proprietor, with varying success through these disastrous times, until the 25th of June, the day of his sudden death. He had a slight fall, on his grounds, a few days previous, but it was deemed nothing serious. He was, however, probably injured internally, and died from this cause.

Keeping Orchards Cultivated.—As the reader knows our conviction is that orchards are more successful through a series of years laid down in grass and annually top-dressed, than when cultivated and cropped. Though our own views are decided, we are anxious to see the question freely discussed in view of its great importance, and we are pleased to find it receive notice from our contemporaries. As we are anxious to record both sides of the question, we extract the following from the *Country Gentleman*. After remarking that trees grown as we recommend will grow but "two inches yearly," it concludes by observing:—

"The most productive and healthy old apple trees which we know, are those which stand in old, fertile, constantly cultivated gardens. One of these trees has borne forty bushels as a single crop; and none of them have the stunted, mossy appearance, nor the dead shoots and branches, observed in some neighboring orchards in grass. There is, however, some ground for the observation occasionally made, that neglected trees are hardier—the fact is, none but the very hardiest individuals can endure such treatment; all the rest of weaker endurance have long since perished, and these only remain."

We do not feel our ability to make our ideas understood, complimented by the inference that we have recommended a system that implies but "two inches of annual growth," or a system of "neglected trees,"—yet we trust this misconception of our views has not extensively prevailed.

Currant Wine.—*J. L., Rossville, Ind.*, the following, from the *Boston Cultivator*, will probably suit you. If any correspondent know a better way, we should be glad to learn:

"To each gallon of clear currant juice, add two gallons of water, and to each gallon of this mixture add three and a half pounds of good brown sugar. Keep the vessels in which the liquor is put full, and when the fermentation has subsided, close them tightly, and place them in a dark cellar, where the temperature is as uniform as possible- If a stronger wine is wanted, add, in February, one gallon of the best brandy to every 30 galls. of wine. Bottle in May.

Strawberries in Philadelphia Markets.—In one Market House—the Western—for the week ending June 14th, 1862, 14,916 quarts were sold at prices ranging from 6 to 15 cents per quart. 300,000 quarts is the estimated sales for the week in the whole city, or about one pint for each member of the population. Plenty of room we should judge for more strawberries here.

Foreign Intelligence.

Greenhouses on Fire.—This is a frequent disaster in our climate. The *London Builder* recommends that women's dresses be rendered incombustible, by steeping them in a solution of one pound of sulphate of ammonia in two gallons of water. Why may not the woodwork, near our greenhouse furnaces, be served in the same manner?

Culture of Endive.—*Soil and Situation.*—Like many other garden vegetables, Endive likes a rich generous soil and an open situation. Shade is objectionable, and the drip of trees is very bad. In the routine of crops it ought not to follow Lettuce, neither ought it to succeed any of the Cabbage tribe if that can be avoided. If it has to succeed a crop of anything of the Cabbage kind let the ground have a good manuring, and possibly a good result will follow. The same treatment may be observed if Peas, Carrots, or other crops have previously occupied the ground.

The object being to obtain a quick growth, manuring is more especially necessary for crops that are intended for use in the autumn only. Those to stand the winter may be planted on a less rich soil, as the conditions necessary to obtain a fresh crisp growth are not those to enable the plant to withstand the hard weather of a severe winter. More shelter in the latter case is also required—in fact, a south border or some such favored place should be selected, and the open deep-tilled squares or quarters of the kitchen garden for the autumn crops. Both of these crops are of course for use in what may properly be called winter, only the one comes

into use before the other, and the supply is kept up by intervening plantations coming in as wanted.

Time of Sowing.—Every ten days from the 20th of June to the 1st of August; and a sowing of Batavian Endive may be made a week later than the last named time. Usually, however, the dwarf hardy Lettuce of the Hammersmith Cabbage breed are preferred to come into use in spring. Endive cannot boast of so many varieties as most other vegetables. A Green Curled and a White Curled form the general autumn and early winter crop; and the plain-leaved variety, or Batavian, is more hardy, and usually planted to stand over the winter. In addition to these, some growers have affixed their names as having produced an improvement in the plant. A hardy useful sort by Mr. Fraser was much admired a few years ago.

The White and Green Curled, however, differ so little on the whole that they may both be regarded as one to the small grower, and sowings of each may be made at the early periods indicated. If the weather is very hot and dry at the time of sowing, the beds should be on the north side of a wall; or, what is still better, sow in an open exposure, and water and shade as directed for Cabbage and other seeds.

If the seed is good it need not be sown too thickly; no vegetable suffers more by being thick in the seed-beds than Endive. As the value and utility of the plant depend on the number of leaves arising from the collar, these cannot well be produced if the plant is closely packed up amongst others suffering equally with itself. Should circumstances, therefore, prevent the bulb being planted out in the proper place at once, when getting thick on the seed-bed, thin-out, for generally there will be a plentiful supply left for consumption.

Planting.—As before stated, an open piece of ground well manured is best for the main autumn crop, but the shelter of a north wall will be better for such as have to stand the winter. Rows about 18 inches apart, and the plants about 15 inches from each other in the row, will not be too much. Shallow drills drawn with the hoe are advantageous for the plants, as these are then planted somewhat deeper; and the leaves resting on the cool earth derive much benefit during the dry period we sometimes have in September or before.

Watering need not be resorted to, except in peculiar cases where the ground is very dry, and the situation a sort of hot hungry sand. In the latter case water may be an advantage, and the more so is manure water be occasionally administered; but where possible avoid systematic watering, as it induces the roots of the plants to remain near the surface in the expectation of that food artificially given to it at the stated time. Do not, however, let the plants suffer; but a growth which mostly takes place in autumn when the nights are long and dews heavy rarely suffers for want of water.

Blanching.—Many makeshifts are adopted for effecting this. The best thing is a common pan-tile; but flower-pots and pans are often used, and sometimes slates or boards, the object being to exclude the light, without at the same time bruising the plant by the weight placed upon it, so as to cause it to decay and thus perish. It is also essential to have the plant dry at the time it is covered up, as extraneous moisture is hurtful to a plant undergoing a process which deprives it of much of its vitality.

A few days generally suffice for blanching the required number of plants, which must be selected as being the most forward in the plot, and showing symptoms of blanching themselves. So long as the weather keeps open the plants so treated in the open ground where they are growing are the best; but when harder weather sets in, another way must be adopted, and some should be taken up and stored away in any sheltered dry place where they can be had at all times. This subject brings us to the next point in the treatment of the plant.

Protecting in Severe Winter Weather.—As already said, some protection is necessary when several days' frost may be expected in succession. For this purpose a dry open shed, with one side perfectly open, is as good as anything. Plants which have been previously tied up on a dry day should be taken up with good balls, bedded in here tolerably thick, and, unless the weather be very severe, they will require very little other protection; but if it does, it is easy to place some mats or straw over the plants. Batches of plants may be brought in as required, as it is advisable to have some under cover all the winter.

A frame with glazed lights is also a good place, and such protections are often wanted for something else in winter; but a cold pit, whether of turf sides or brickwork, with wooden shutters instead of glazed lights, answers very well, and such a pit is very useful for other purposes. Sometimes a few thatched hurdles placed over the plants where they are growing will save them to a great extent, but not so well as where more pains are taken to exclude severe frosts. Many other contrivances for providing temporary shelter are likewise resorted to.

Foreign Correspondence.

NOTES UPON THE HORTICULTURE OF SCOTLAND IN THE YEAR 1861.

BY E.

NO. VI.

The Royal Botanical Garden and Royal Experimental Garden of Edinburgh, both under the superintendence of Mr. James McNab, a very skillful botanist and experienced gardener, I found in good condition, and in a high state of keeping; both are what their names indicate. In the Botany Dr. Lindly is *King*, his Natural Order is carried out in all its details; and is most interesting to the botanist. The garden is open to the public every day except Sunday; all the walks are broad, with grass borders, and form a delightful promenade. The arrangement of the different genera and species are admirable, and show what skill and ingenuity can do. The Portugal Laurel hedge near to the pound, which is sixteen feet high, is blackened and leafless to within two feet of the ground by the severity of the last winter's cold; the snow then upon the ground saved the lower part. The large Palm and Pine house was full, and the plants all thrifty. The gardeners were busy potting and repotting the exotics of the other glass structures; some were in and others out, and they had not that fine appearance they have at other times. The same was the case in the Experimental Garden, which is only open to the public on Saturdays. Some of the experiments appeared more for curiosty than utility. I regretted not finding Mr. McNab at home, as I once (in 1834) had the pleasure of drying several hundred specimens of American plants for him, when he was sent out upon an exploring expedition for the native plants of Canada and the United States, by the government.

Across the road from the Botanical Garden, is the Flower and Fruit Garden of Mr. John Carstairs, kept in the finest style, broad borders along the walks and covered with flowers in beds five feet wide, with two feet alleys between. The squares are filled with shrub fruits, tree fruits and strawberries. There are two propagating pits, about twenty feet long each, and ten feet wide, with span roofs; every alternate sash upon each side is moveable, and fastened to the top beam with hinges, and are tilted up when air is need. The pits are four feet under ground and two feet above ground, with brick walls and sliders in them to let off heat when it is too great. They are heated by hot-water pipes, and they are divided by a six foot walk, under which the pipes run, and, the one can be heated and the other kept cool when desired. The furnace of the fire that heats the water is outside the garden, and the smoke goes along the flues of the high wall, and heats it for the fruit trees trained upon it. The hot-water pipes rest upon blocks of stone six inches above the bottom, and the floors are of narrow boards with inch openings for the heat to ascend; but it is greater below than above, and just what is needed for propagation—*bottom heat*. The cuttings are mostly all in shallow boxes, a foot by ten and eighteen inches. The sliders in the walls are the same as we have for admitting hot air into our rooms, and they are the regulators of heat and cold. The floors are eighteen inches below the tops of the walls, and the sliders are below them. Water forced in at the sliders make a kindly moist air. The pit next to the fire is warmest, and cuttings difficult to root are first put in it, and after making roots they are moved into the other to harden. They are the most ingenuous structures I ever saw for propagating; they are so low that they can be shaded with mats as easily as hot-bed.

There are no city private establishments in Edinburgh that can be compared with that of James Dundas, Esqr.'s, or Dr. James Rush's; indeed in all my travels, none of the glass structure collections were in such good condition as in these two places.

The Cemeteries far excel ours in the way they are laid out, and their gardening embellishments and arrangements are judicious. There are but few trees in them, and those are of small growth, such as White Hawthorn, Mountain Ash, Yellow Laburnum, Cercis siliquastrum, etc., for deciduous, and Araucaria imbricata, Tree Boxwood, Cedrus deodara, Cryptomeria japonica, Arborvitæ, etc., for evergreens; but the evergreen shrubbery is abundant, and kept in fine shape by the shears. Large spaces are allotted by the companies for showy flowers, and all the lots are enlivened with them; but there are no ever-blooming roses except the common pink daily. The roads and paths are broad and solid; the grass is kept short and of a fine green. The lots are wholly enclosed by iron posts, chains and railing, and painted a brownish color, and look dull compared with our white marble corners. They have no such fine sculpture as at our Laurel Hill Cemetery.

The Aberdeen marble is red with white mottleings, and takes a polish as bright as a mirror; the Peterhead marble is a dull, dark blue, with white marbleings, and takes as glossy a polish as the Aberdeen. Our White far trancends them in lightening up a city of the dead.

The *Dean* or Western Cemetery, is a piece of high table-land, on the edge of the river Leith, and is in the shape of the letter L, by a turn of the river. The superintendent is a skillful gardener, (as are all other superintendents of cemeteries and public gardens; they have a knowledge of what kinds of plants are suitable for imparting beauty to places, and can advise both the companies and lot holders as to what is best for them to get, so as to give diversity to the scene; were it otherwise, their gardens and cemeteries would not be what they are). I observed many noble names in the Dean Cemetery, with splendid monuments of Aberdeen marble; the lettering is finely executed. Single lots are three feet wide and eight feet long; the chains are of square links, very heavy, and look like cast iron. In digging the graves, three thick timbers are laid upon the edges of the roads, and boards put across them, flat and on edge, and the sides fastened together with hooks and staples, like our cold frames; the earth dug out is put in them, and is again dug out and filled into the graves, and no dirt is made. In a fortnight or so after a burial, they go to the Links (public meadows) and shape off a piece of sod the proper size to cover the grave, and carefully cut it all one thickness, beginning at one end and rolling the sod as it is cut upon a strong round stick; as the cutting proceeds it is hauled upon a cart to the cemetery, and rolled upon the grave, as neatly as a chambermaid does her bed spreads; it is firmly pressed down and the grave is finished.

The *Grange* or Southern Cemetery is a flat, oblong square, and is a picture of beauty. The buildings for vaults and for tool houses are one story high, the fronts are of light sandstone, chisel-dressed and of blocks of uniform size; the back walls are seven feet high and the fronts are sixteen feet high; the roofs are arched with stone, rising from back to front to ten feet high; the back walls and roofs are mounded over, making a neat slope, and covered with grass; the front walls are left three feet above the sod with a broad capping, and flagstones set along them for seats. Through the middle is an arch with a road for carriages to pass through; and the corpses are carried into the vaults in wet weather from the exposure to the rain. In front of the arch and on each side is a flight of stairs by which to get upon the top, where there is a view of the whole grounds.

Warriston or Eastern Cemetery is much the same, only the ground is a little rolling.

The *Dalry* or South-Western Cemetery is sloping, and the grounds at the back of the buildings are on a level with their tops; and, again, level with their fronts; or, in other words, a face was cut in the slope and the earth thrown upon the top, and the buildings erected and the earth spread over them and sown with grass, making the soil two and three feet thick upon the roofs, and the grass is always as green there as upon other parts. In looking over the grounds from the top of the buildings, they are like garden pictures in frames, with their high stone walls. The clustering beauty of the masses of evergreen shrubbery, enlivened with the dazzling colors of flowers, and the very green turf and broad gravel roads, make them like most beautiful and highly embellished pleasure-grounds.

There is another remarkable feature I observed in these cemeteries: in many of the lots were women, both old and young, sitting reading their *Bibles*. I noticed that they were all widows, as they wore round borders to their caps under their bonnets, as all widows in mourning in Scotland do.

It will be long before I can forget the pleasure I enjoyed in viewing and noting down the gardening beauties of the cemeteries of Edinburgh.

Horticultural Notices.

PENNSYLVANIA HORTICULTURAL SOCIETY.

DISCUSSIONAL MEETING, JULY 1.

D. Rodney King, Esq., in the chair.

We can give but a brief abstract of this interesting meeting.

Mr. Chas. P. Hayes opened the discussion with the subject, pre-arranged,

GRAPE CULTURE.

He said his experience had been confined to a few out-door vines; but he had observed their wants and their nature so closely, that he was able to form decided conclusions of his own on the subject, though he did not suppose for a moment that his practice was proper or perfect in every particular. He preferred one year to older vines for setting out. A well drained, light, porous soil, containing carbonaceous matter, he thought the best. Stiff clays he thought favorable to longevity, and continued productiveness.

The preparation of the soil for a vineyard or border intended to remain for a number of years, should be at least 20 inches in depth, and this can be accomplished in a vineyard much more easily than generally supposed, by the following process: First, dig a trench about 12 inches wide, and in

depth 20 inches, the whole length of the vineyard, placing the earth on the opposite side from that intended to be plowed. When this is accomplished, run the first furrow with a good team and heavy plow, turning the upper soil 8 inches deep into the bottom of the trench; again return to the starting point with the team, plowing always the same way, throwing the subsoil on top of the previous furrow, this will make a second trench about 16 inches deep. Following the second plowing, have five or six men with spades to clean out the second trench to the depth of 4 inches more, leaving it the depth of 20 inches as before, and so continue the process till the whole ground is prepared; by this means about one-third of an acre can be turned in one day. The subsoil being at the top, and in depth from 8 to 10 inches, it will be necessary to apply to it some good surface soil, either from a woods or taken from an adjoining field, say from 100 to 150 cart loads to the acre, and also spread evenly on the same about 30 cart loads of well decomposed manure, this preparation should be made at least three months previously to planting, and before planting should be plowed again to the depth of 3 or 4 inches, and harrowed down.

He would plant rather shallow, about six inches deep. He recommended lime rubbish from old buildings, for stiff soil in city yards, also bone-dust or leather parings. Vines make but a feeble growth the first year. Would limit the growth the first year to two shoots. Prune as soon as the leaves drop, cutting one shoot away. Mulches in dry weather; never uses green decaying matter for mulching.

The management of the second year should be similar to the past, excepting that 3 shoots should be allowed to start, and grown till they have attained the height of 12 inches, when one should be cut away, and the two strongest, which are usually at the top, carefully tied to the stake and laterals pinched in. Remove the mulching in the fall of this year's growth, and give the surface a good sprinkling of lime, or better, wood ashes, if they can be obtained, and harrow or rake it in, but not deeper than two inches. The vine can never be cultivated deeper than two inches after it is once established, without great danger of injuring the roots. Should the vine be in a healthy condition, it will make a good growth this year, ripening the canes to 10 or 12 feet in length; should bunches appear, one or two can be left on each cane without any apparent injury. In the fall, as before, the canes must be pruned; if for trellis, each shortened from two to two and a half feet, and tied horizontally to the trellis, which should now be erected 6 feet in height, with five wires or slats equal distances, the lowest being 12 inches from the ground. If for stakes, shorten one cane to 30 inches in length and bow it, and the remaining one prune to a spur or one bud. The one bowed may be allowed to bear a moderate crop of fruit the following year. When at the fall pruning, the fruiting stock must be cut to one bud, and the shoot grown from the single eye bowed; the vine can be managed in this manner for an indefinite number of years, and will produce an abundant crop, by only increasing the length of the cane for the bow annually, until it is 12 to 15 feet in length.

Mr. H. then touched upon pruning, in which he described his practice, as recorded in our last month's issue.

Mr. W. Elder has seen the grape, during a twenty-eight years' experience, more uniformly successful under pavements and under sod, than elsewhere. He had made, and seen others make vineyards on sloping hillsides, some of them at great labor and expense, but had never known one successful for any great period.

He gave his experience with grapes under glass, opposed over manuring, advocated plenty of well-rotted sod from old pastures, and did not think the detached and divided borders would be time proof. He thought a regular and abundant crop of moderately fine fruit, through a long series of years, a better object to seek for than large monstrosities, with their usual results in great risks and many failures.

Dr. Grant, of Iona, New York, being present, was invited to address the meeting. Most of the following condensation was given in reply to inquiries from the members:

He said it may be often a good method, but it is doubtful if pinching to two leaves will develope the dormant bud. If pruned to one leaf it breaks again, and a second leaf is formed and a better result obtained than if pinched to two leaves, which developes the laterals too much. Young vines should be pinched three or four times. On old vines, two pinchings are sufficient.

At Thomery the soil and climate are both unfavorable. The first idea was to get the most shelter possible. The walls are of clay, whitewashed. Where the system has been continued many years, it has been found that the vines are better at a little distance from the walls; the leaves move in the wind, and the fruit is better flavored. If closely confined the fruit is less vinous. Four or five rows complete the Thomery system; the first against a

wall say 8 feet high, the next on a trellis, less in height than the preceding.

There was a roof on the Thomery trellis when perfectly carried out, that kept off the rain, and led to long keeping. Fruit on Thomery walls brought double the price of those trellis raised. He thought not near enough attention was paid to shelter; it would probably be an advantage at all seasons.

He would not defoliate vines to the extent pursued by German Vine-dressers on the Ohio, but thought in moderation it served to give color to the light varieties. He preferred the wire trellis for field culture. As to pruning he remarked:

There are several systems both of pruning and training, the one controls the other. The Thomery system requires spur pruning. The bow system comprises the spur and short cane method, and supposes a renewal. There is no fruit the second year without renewal. The fan method requires four systems of pruning. Mr. Hayes has done well in taking the Thomery system as the best. For field culture there is no better. In Germany a modified Thomery system has been introduced by the Rev. Van Vorst, a combination of the long rod and Thomery. It has some disadvantages. The Thomery is a combination of several systems, and all things considered, is the best ever yet devised. A stronger trellis is required for the Thomery than for the renewal system; the heaviest weight of fruit being at the top, which is the reverse of the renewal system. Posts are not required oftener than 15 to 25 feet apart, as the upright canes serve to keep the vines in place where properly tied.

As to Foreign grapes under glass he had grown them for thirty years, without marked success. On this head he would prefer to hear the experience of others than give his own.

Mr. Saunders made some remarks on Grape-vine borders, and the ventilation of Grape-houses, that contained points of novel interest, and we give them entire in another column.

Mr. Mitchell's practice had been somewhat in the direction suggested by Mr. Saunders. He had great faith in moist air ducts, and annual top-dressing, though it had been but about one inch deep.

Dr. Grant thought a modification of the Thomery system might do under glass. Fruit from spurs was always of better quality than from rods. In out-door vines he did not approve of shallow planting. Would set down to the depth the soil had been worked. Surface roots were no benefit to the Grape-vine. Some thought them rather an injury and cut them off.

Mr. Harrison asked whether mulching was not recommended for the Grape-vine, and if mulching did not encourage surface roots?

Dr. Grant said that small fibrous surface roots died every year; and cultivating four inches deep took away rootlets that would die at any rate. Cultivation was worth more than the surface roots.

Mr. Hayes would not remove surface roots, or plow deeper than two inches on this account. He advocated mulching.

Dr. Houghton referred to the difficulty of fruiting the lower parts of canes trained on the back walls of lean-to Vineries. Had great success by coiling into the soil part of the old cane, and training up a new cane. Had in this way about five bunches from two year old pot vines, set out in this manner.

Mr. Saunders thought cutting down the old cane and raising up a new shoot, would do as well.

Mr. D. Rodney King enquired if any one had experience in the relative profits of native grapes from the open air, and foreign ones under glass.

Mr. Grassie, who raises grapes for market, said the present price (July 1st) of Hot-house grapes was 75 cents per pound, in Philadelphia.

Dr. Grant said Catawba and Isabella in New York, in their season, brought 17 cents. Had seen Delawares bring 50 cents per pound, when Concords brought but 8 cents.

He would not mulch permanently till the fourth year, after that he would never manure or cultivate. Salt hay is the best mulch.

Mr. Saunders thought the shelter was the reason of vines always doing well on trees.

On motion of Vice-President D. R. King, the thanks of the meeting to Dr. Grant for his kind and instructive remarks, were proposed and adopted; and on motion of Secretary Harrison, he was nominated to a Honorary membership, to be acted on at the next business meeting of the society.

Robert Cornelius, Esq., was appointed by the chair to open the next Discussional Meeting, August 5th, on "Pear Culture."

STATED BUSINESS MEETING, JULY 8.

The several Committees made the following reports:

Plants and flowers. Best basket to Jas. Eadie, gardener to Dr. Rush.

Hanging Basket. Best to same.

Twelve Herbaceous Plants. Best to Mr. Thomas Meehan.

Collection of Indigenous Plants. Best to Mr. Joseph Meehan; 40 species.

A Special premium was awarded to Mr. W. Joyce, gardener to the President Baldwin, for

Achimines. The Committee say, "It is a greenhouse plant of great merit, and these were well grown." Also, one to Mr. W. Smith, gardener to Hugh Davids, Esq., for Fuchsias; and to Mr. W. Southwood, Florist, for a neat Parlor-flower stand, filled with plants. The committee also mentioned in their report a new Double Petunia, "General McClellan," exhibited by Mr. C. B. Miller, of Broadway, New York; also beautiful double Hollyhocks, from Mr. H. A. Dreer, remarking, "these border plants are worthy of more extended culture." The committee present were Messrs. Jas. Ritchie and Wm. Saunders.

The Fruit Committee had, "according to the Schedule," but Raspberries before them; but the Gooseberry, Currant and other fruits, were out in some force. The following premiums were awarded Raspberries:—Best one quart, Mr. A. Felton, gardener to H. Duhring, Esq.; Hornet.

The other kinds in competition with this were, Red Antwerp, Belle de Fontenay, Best collection comprising greatest number of varieties, Mr. Wm. Parry, Cinnaminson, New Jersey; 16 varieties. In this collection, Brinckle's Orange was considered very superior; Red Alpine very much resembled Catawissa. The Miama Black had much the appearance of Doolittle's Improved, but very different taste, being quite sweet. The Hornet had no superior in size.

Best Red Currants, Mr. Wm. Saunders; the Cherry. Other varieties in competition were Red Grape and Red Dutch. The usual sourness of the Cherry was not against it here, for all were sour; the result perhaps of the wet season. Best White Currants, Mr. W. Joyce, gardener to A. W. Baldwin, Esq.; White Grape. Other dishes of White Grape and the White Dutch were the only kinds in competition. The committee noticed a fine collection of Currants from the garden of Secretary Harrison; "there were 8 varieties, the Versaillaise being very fine." The same gentleman exhibited 9 varieties of Raspberries, among others the Souchettii, a pale variety of distinguished flavor.

Gooseberries. Best to Mr. Felton, gardener to H. Duhring, Esq., for a kind marked "White Gros Manger." 6 other kinds in competition. The committee "noticed a fine collection from Mr. McLaughlin, gardener to I. B. Baxter, Esq. Mr. Joyce and Mr. Harmar exhibited fine collections."

For Peaches from Pot-plants, a special premium was awarded to Mr. Chas. Miller, gardener to D. Rodney King, Esq.; and to Mr. John Stone, gardener to W. W. Keen, Esq., for White Muscat and Black Hamburg Grapes; and to John Landers, gardener to Dr. G. P. Norris, Wilmington, Del., for Bowood Muscat, first time exhibited, and bunch weighing 2 pounds and 14 ounces, and White Muscat Grapes. The grapes were none of them quite ripe, but were in other respects very fine indeed.

Pine-apples. 6 cut specimens, a special premium to Mr. W. Joyce, gardener to the President. "The committee noticed a seedling Raspberry from Mr. Felton, of good quality, as large as Hornet, and, from specimens exhibited on the canes, appeared to be an abundant bearer." Messrs. R. Buist, Thos. Meehan, J. E. Mitchell and Chas. P. Hayes, Committee.

A report, *ad interim*, of fruits exhibited between the adjournment of the exhibition and the business meeting, was presented and adopted. It noticed some fine Nectarines, ripened in a cold vinery, by Mr. P. Courtenay, gardener to A. W. Harrison, Esq.; and a collection of 10 varieties of Raspberry, grown by Mr. W. Parry, Cinnaminson, New Jersey. Messrs. J. E. Mitchell and C. P. Hayes, Committee.

Some meritorious vegetables were exhibited by Mr. Felton, gardener to A. Duhring, Esq.; but no vegetables having been set down in the schedule for this month, the committee had no power to meet.

The next display will be on August 9th. 6 varieties of Gladiolus, cut specimens, and the best collection of cut varieties; peck of Peaches; 12 specimens of a Nectarine; one quart Blackberries; collection of Gooseberries, and three Egg-plants are among the special items called for, in addition to the regular matters.

Resolutions testifying to the worth and services to the Society, and to horticulture generally, of the late Vice-President Fahnestock, were offered by ex-President Caleb Cope, and unanimously adopted.

H. A. Dreer, Esq., was elected Treasurer of the Society.

FRUIT GROWERS' SOCIETY OF EASTERN PENNSYLVANIA.

In our last issue appears a notice of the next meeting of this energetic young Society, which we trust will receive attention. We give below the first half of the Entomological address of Mr. Rathvon at the last meeting, as a sample of the mental food the Society provides for its friends. We shall probably conclude the essay in our next.

CURCULIONIDÆ.

There is probably no *coleopterous* insect that is more to be dreaded by the fruit-grower, than that

which is usually spoken of and written about, as "*the curculio*," and from the fact that it is thus definitely alluded to,—an idea must exist in the minds of many, there is but a *single species*, or kind, that is guilty of all the misdeeds which belongs to the various members of a very large *family*.

The tribe of insects to which the "weevil" or "curculio" belongs, is a very extensive one, and was, in the days of the great Linnæus, by him comprised in a single *genus*, which he terms *Curculio*; but which was afterwards changed to the family name of *curculionida* by Mr. Lach, because the individuals composing it, had greatly increased in number and diversity of form, by the subsequent labors of naturalists, so that there is now belonging to the insect fauna of the United States, one hundred *genera* belonging to this tribe or family, which comprise more than three hundred and fifty *species*, not including the family *scolytidæ* which embraces a number of allied habits and form.

The general name of *Rhyncophora* or "beak-bearers" has been applied by English naturalists to these insects, and this name has been abbreviated or corrupted into that of *snouters* by the common people, because generally speaking, the head of these insects is prolonged into a *rostrum* or snout, at the extremity of which, there is a small, but at the same time, an exceedingly powerful and sharp pair of mandibles or jaws. The *curculionda* are usually classed with *tetramerous* insects, that is, those in which all the *tarsi* are composed of four joints; but Mr. Westwood asserts that they are *really* composed of *five* joints, but the fifth is so exceeding minute, and is concealed so much within the cavity of that which precedes it, as scarcely to be seen, and for that reason the term *pseudotetramera* is proposed for them.

Some of these insects have been appropriately termed "Weevils,"—thus the "corn weevil," the "grain weevil," the "rice-weevil," and "nut weevils"—have names by which they have been long designated, by those who have been made to feel this potency in the destruction of the produce of their labors. But this tribe (of insects), has among it many species that attack *other* substances than corn, wheat, and rice and nuts; for in addition to apples, and pears, and peaches, and cherries, and plums, they also attack the foliage of trees, and vegetables, and not a few burrow into forest timbers, and thereby destroy the vitality of the tree, so far, as to cause premature death and decay.

The larva or grub of the *curculionida* are footless maggot-like worms, of a whitish, yellowish, or pale pink color—sometimes very white and sometimes a deeper yellow, owing to the substance upon which they feed. They are usually short, thick and fleshy, tapering slightly towards the ends, and have a hard, black, brown, or yellowish glossy head, armed with a very short and sharp pair of jaws, with which they are able to cut through a nut-shell, or corn, wheat, rye, and rice grains, or through hard wood. In some species, rudimental feet are present, but they are too small and imperfectly developed to be of any service in locomotion, and therefore the larva when taken from its burrow and placed upon a plain surface, if it moves at all, is by the expansion and contraction, longitudinally, of the rings or segments of the body. This is however not the case in passing through a gallery or cell of its own construction, for in that case, like a sweep ascending a chimney, by the alternate expansion and contraction before alluded to, it is enabled to make easy and comparatively rapid progress; therefore when fruit infected with the curculio falls to the ground, the larva has no difficulty in making its way into the ground, if its condition be such as to admit it, but if it be otherwise, it falls an easy prey to adverse contingencies. Some of the larva of these insects are so exceedingly small, as to find sufficient room and sustenance for their entire development within the cavity of a single seed of clover, whilst others reach the comparatively enormous size of three inches in length, and more than half that much in circumference. Prof. Ieager, says, that in some places the inhabitants of Central and South America, scarify the stems of "cabbage palm," in order to invite the female "palm weevil' to deposit her eggs therein, and when the larva are matured, they cut down the trunks or stems, for the purpose of getting the larva, which are from three to three and a half inches in length, and these constitute one of their greatest luxuries, for they then are as rich and as yellow as the finest May-butter. The apex or terminal germ of this palm yields a delicate head resembling a head of cabbage, and this, together with the larva, constitutes a savory dish that is highly relished, and is moreover healthful. And why should it not be, for the animal only feeds upon the interior of the same trunk which yield them their much coveted *vegetable* dish? We *enlightened* christians, eat oysters and lobsters and shrimps; and the German and Frenchman goes a little farther and eats snails, and where is the harm in going a little farther and eating *insects*, as the African, the South American and the Pacific Indians do—if they are edible.

I have extended these remarks upon the general character of this tribe of insects, because it appears

to me, that ultimately a counteraction to their excessive increase, and the injuries which fruit, grain, and vegetation sustain through them, may be found, in applying them to some useful purpose, in some stage of their development. The African locust, which proves so destructive to African vegetation in some districts of that country, fully counterbalances the evils sustained through the gratification of its insatiate maw, by the rich food it yields those, in turn, who have been subjected to its ravages. A friend of mine who spent some years in California, informed me that he had on several occasions eaten of the large "Mexican Locust," which is in some seasons, very extensively used by some tribes of Indians, as food. Their manner of cooking them, is either to boil them in salt water, or else to pound them into a sort of paste, which is spread upon a flat stone and baked, the same as Virginia hoe-cakes;—my friend added that the taste was by no means disagreeable. The *cochineal insect*, before it was discovered that its body yielded such a beautiful and valuable scarlet dye, must have been regarded as a noxious insect, because its existence in large numbers, must be exhausting to the plants upon which it feeds. The *cantharis*, or blister beetle—more commonly known as the "Spanish fly," is very destructive to the vegetation upon which it feeds, and if it does not more than *equal*, in rapacity, some species of the same family which we have in this country, it is capable of great destruction.

Of this we may be well assured that birds, pigs, and poultry, are very fond of insects, and more particularly of their tender and delicate larvæ; and in reasonable quantities they thrive well upon them. Pigs and poultry manifest great fondness for insects, especially when they have, for a long period, been confined to vegetable food. Being omnivorous in their taste, they will, whenever an opportunity is afforded, gratify their appetites for this kind of food to a very great extreme. I recollect, when I was a boy, of a neighbor of ours, who had a half famished hen setting upon goose eggs. One day the hen left her nest and very greedily devoured a large number of cut-worms, grub-worms, and other insects, that had been turned up in a freshly plowed field contiguous to her nest—indeed she filled her crop to its greatest capacity, and the worms actually eat a hole out through the thin filament that surrounded them, and thus the poor hen fell a victim to the rapacity of an ungovernable appetite.

Had the hen been healthy, or have taken the grubs in smaller quantity or even have killed them before she swallowed them, which is usually the case, or probably had she taken in a portion of gravel, and run about with the other fowls, such a thing would not have taken place; but running to her nest again and resuming a state of weakened inactivity, the consequences were otherwise.

From all the observations I have been able to make upon the larva of the various species of *curculio*, and especially those that infect the cherry and plum fruit, there has nothing presented itself as a remedy that will compare with the incidental services of pigs and poultry. Paving under the trees, is the next best remedy, but this is not so complete, for a few will find their way between the bricks into the ground. I never saw the good effects of pigs and poultry so fully demonstrated, as I did about two years ago in this city, and not more than half a square from this place of meeting. Two plum trees stood in an enclosure, in which two pigs and a number of chickens, ducks, and pigeons were running at large, and in which I could not discover a single spear of living grass, or any other species of vegetation. One of these trees was on higher and harder ground than the other, but both were well hung with sound and promising looking fruit, which subsequently ripened healthily without a single exception. No fruit was at any time seen upon the ground, for as it fell it was devoured by one or the other of the animals in the enclosure. The tree that stood upon the lowest ground had larger fruit, and larger greener looking leaves,—but this may have also been owing to the different variety—and the soil under it was more loosened and scratched by the poultry than the other. Annexed to this enclosure was a garden—not well cultivated, but rich in soil—in which was a number of peach and plum trees; not one of which had a single sound fruit upon them—yes, one of them had sound fruit upon a single limb, and that limb hung over the poultry yard.

A few days ago I visited the yard and garden of a gentleman of this city, to look at a grape-vine he wished to show me. 'Here,' says he, 'is a plum tree that bears a good sound crop every year, and the fruit is seldom or never stung with the *curculio*.' I observed that the tree was paved beneath it. 'But here,' he continued, 'is a tree that never bore but two sound crops since I planted it, which is nearly two years old.' This tree was not paved beneath it. He then added that the two years in which the tree bore an abundant crop of sound fruit, he had a hen with an early brood of spring chicken cooped up beneath the tree, to keep her from scratching the garden. The little chickens

could pass in and out through the slats of the coop at will, and devoured everything in the shape of an insect that happened in their way. My friend remarked that he intended to so manage it, as to have a brood of young chickens under that tree the present season, about the same time as heretofore; namely, in the months of May and June.

The utility of young chickens, as efficient insect scavengers, has been on various occasions, fully corroborated by my friend Doctor Keller, of Elizabethtown, in the succesful destruction of the striped cucumber beetle. (*Dialratica vittata.*)

He has set coops containing a hen with a brood of young chickens among his cucumber and melon vines, and they have kept his vines perfectly clean from these pests; against the depredations of which, so many applications have been made in vain. The Doct. remarked that it was a real pleasure to see how daintily these little industrious chicks would pick off the insects, without disturbing, or in the least injuring the vines; and when, *possum-like*, the bugs would "let go" and fall to the ground, hiding themselves beneath a clod, the quick sight of the chicks would uncover them in an instant, and then they would pounce upon them with the greatest avidity, and would thus continue their labors throughout the whole day.

In addition to these suggestions as guards against the destruction of the *curculio*, there are other remedies which have been tried, with more or less success, both in our own country and in Europe.—The gathering up the fruit as fast as it falls to the ground, and feeding it to pigs—if the pigs are not allowed to run at large beneath the trees—prevents the grubs from going into the ground, and undergoing their transformations there. Or if there are no pigs to devour it, it should be throwed into scalding water, for, it is my experience as well as that of other observers, that, although insects require a certain degree of heat to produce animation and activity, yet they cannot bear for a moment the boiling point. Indeed I have been able to kill them easier at a degree of heat much below the boiling point, than I have by immersing them in the strongest alcohol. Another remedy is to strike the tree with a muffled club early in the morning during the stinging season, first having spread beneath it a white sheet upon which the insects, being partially benumbed will fall. They can then be gathered up and throwed into hot water. This can, however, have no effect upon the fruit that is already stung by them, but may prevent as many of them as are captured, from extending their operations to other fruit on other trees.

I have read of cases where a man jarred a tree every time he passed it, which was very often, as it stood near his path from his house to his barn—and by this means alone saved his crop. He picked up or killed no insects, but merely contented himself with jarring the tree. The insects were no doubt disgusted at his incessant importunities and perseverence, and left the premises for some locality where there would be less disturbance. It has often happened that continual interruption, have caused *other* insects, and animals, to desist from building nests; and to abandon their favorite localities in consequence of them, and there is no reason why the curculio should not be similarly influenced in this respect.

I do not pretend to assert that a pig or a chicken or a pigeon, or a pool of water; nor yet a brick or stone pavement, beneath a fruit tree, possess in themselves, arbitrarily, a talismanic power against the encroachments of the curculio; or that the virtue of these remedies exist without a corresponding cause. If an intelligent farmer desired to scatter his seed so as to insure it a certain germination and growth, he would not scatter it over hard rocks, or barren pathways, or where he was sure it would be picked up by seed-eating animals, but on the contrary he would select such a locality, as under all the circumstances of the case, would be best calculated to accomplish his ends. This course, his reasoning powers, and his knowledge of causes and effects, would naturally lead him to pursue. Although the curculio is not gifted with the powers of reason and reflection, yet it is endowed with unfailing instincts, which, in the economy of its nature, are as potent as the superior reasoning of man, and those instincts lead it to deposit its eggs in such places, as afford the greatest facilities for the full development and maturing of its species. All we have to do, and all perhaps we shall ever be able to do, in the premises, is to interpose such artificial or natural barriers as we may be able to command or control, in order to defeat or disconcert it, in the ultimations of its natural instincts. Whatever is done should be done simultaneously by all the inhabitants, or fruit growers, of an infected district, and only in proportion that this rule is followed, will any remedy be effectual.

Simultaneous tobacco or brimstone fumigations, I believe would also assist in counteracting these insects in their depredations upon fruit trees, grain, nuts, &c., but, whether the benefits resulting from it, would compensate the labor and expense of the operation, could be best determined on a practical experiment of it.

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Hints for September.

FLOWER-GARDEN AND PLEASURE-GROUND.

In many parts of the Northern States the leaves will have changed color previous to the incoming of winter, and the planting of trees and shrubs will commence as soon as the first fall showers shall have cooled the atmosphere and moistened the soil. Further south, where the season will still remain "summer" a while longer, the soil may, at any rate, be prepared, that all may be in readiness when the right season does come. In the present state of our country there will perhaps be only a limited number of hands employed, and planting may commence early in the month. What leaves remain on should be stripped off, and the main shoots shortened. They will then do better than if planted very late. In fact, if planting cannot be finished before the beginning of November in the Northern and Middle States, it is better, as a rule, deferred till spring. In those States where little frosts occurs, this rule will not apply. The roots of plants grow all winter, and a plant set out in the fall has the advantage over spring-set trees, that its roots in spring are in a position to supply the tree at once with food. This is, indeed, the theory fall plants rely on; but in practice it is found that severe cold dries up the wood, and the frosts draw out the roots, and thus more than counterbalance any advantage from the pushing of new roots. Very small plants are, therefore, best left till spring for their final planting. The larger things, and which we recommend planting in the fall, should be pruned in somewhat at planting. The larger the tree, the greater in proportion should it be cut away.

Attention should be given at this season to the flower-beds, by noting what has done well in one locality as a summer-blooming plant, as no time should be lost in procuring a stock for next year.—The best way to propagate all the common kinds of bedding plants is to take a frame or hand-glass and set it on a bed of very sandy soil made in a shady place in the open air. The sand should be fine and sharp, and there is, perhaps, nothing better than river sand for this purpose. The glass may be whitewashed on the inside, so as to afford additional security against injury from the sun's rays. Into this bed of sand cuttings of half-ripened wood of the desirable plants may be set, and after putting in, slightly watered. Even very rare plants often do better this way than when under treatment in a regular propagating house. In making cuttings, it is best to cut the shoots just under a bud,—they root better, and are not so likely to rot off and decay. A cutting of about three eyes is long enough for most strong-growing things, such as Geraniums, Fuchsias, &c.

Small-growing things, of course, will take more buds to the one cutting. From one to three inches is, however, long enough for most cuttings. They should be inserted about one-third of their way under the sand, which latter should be pressed firmly against the row of cuttings with a flat piece of board,—not, however, hard enough to force the particles of sand into the young and tender bark, which is often the first step to decay. For a few cuttings, they may be inserted with a dibble; but where many are to be put in, it saves time to mark a line on the sand with rule or straight edge, and then cut down a face into the sand, say one or two inches deep, when the cuttings can be set against the face like box-edging. All amateurs should practice the art of propagating plants. There is nothing connected with gardening more interesting.

Those who have no greenhouse, and yet are desirous of preserving many half hardy plants through the winter, employ *cold pits*. Choose the dryest situation in the garden, and sink about five feet in

depth. It is important that no water can be retained at the bottom. The pit may be of any length required, and about five feet wide, so as to accommodate six feet sash. The inside of the pit may be built up of boards, or, if something more durable and substantial is required, brick or stone. The body of the frame may be built up a few feet above the level of the surrounding soil, and the earth which comes from the pit be employed in banking up to the upper level of the frame. Shelving should be made for the inside so as to extend from the base of the front to nearly the top of the back, on which to place the plants in pots. In the space which will then be under the staging, hard wooded and deciduous plants, as Lemon Verbena, Fuchsias, &c., may be safely stored, while the more succulent kinds are shelved overhead. The plants to be preserved in such a pit should be potted early, and be well established and healthy before being pitted; much of success depends on this. The less water they can be made to live on without withering through the winter the better they will keep. Straw mats must be employed to cover the glass when freezing time commences, and when the thermometer is likely to fall below 20°, straw or litter should be thrown over. Board shutters are also excellent, as it keeps the snow out from the straw and litter, which sometimes makes the mats very awkward to uncover when we would like to give air. Very little light or air will be required through the winter, when the plants are not growing. If a good fall of snow cover the pit, it may lie on undisturbed for two weeks or more without injury. When a warm dry day offers the sashes may be raised if convenient, to dry up the damp. Many kinds of border plants can be kept over winter this way with little trouble.

FRUIT GARDEN.

One of the most interesting employments connected with this department, next to presenting a friend with a fine fruit or eating it yourself, is to gather it. It requires some judgment to do this properly. Most of what we see in market of pears or apples are gathered too soon, while the amateur goes into the opposite extreme of leaving them on too long. The proper time to gather them is when they part easily from the tree on being gently raised up. But fruit-gathering ought to commence very early in the season, namely, as soon as insects have evidently damaged the fruit. An amateur should go over his apples and pears once a week after they reach a respectable size, and take off all the unfortunate specimens, which should be handed to the cook, or sent to market. This process would have a tendency to keep down the number of insects, by destroying their larvæ before they reach their final stage of development. At this season nothing will be left on the tree but perfect fruit. They should, of course, be all carefully gathered by hand, and great care taken to have none of them the least bruised. They should then, if summer fruit, be placed in a cool room, and a cloth thrown over them for a few days, when those who never ate an early apple or pear before so treated, may wonder to what species of fruit they belong. Late fruit must, of course, be left on as long as possible, so that frost does not injure them; but all kinds should be occasionally tried by the lifting process we have described, and taken off at the first sign of maturity they afford.

Speaking of insects again reminds us to urge on the fruit-grower the necessity of perpetual war against insects. Schemes for driving them away are of small account. We must have "their blood."—Very much may be done by the employment of wide-mouthed bottles with sweet liquor, as we have before recommended. Mr. Downing, in one of his essays, mentions a friend who, by the use of only molasses and water, caught in one season *three bushels* of insects; and Mr. White, in his "Gardening for the South," mentions an individual who, in this way, caught a peck in one night. It is impossible not to believe but that, by a determined perseverance on the part of all fruit-growers, the troublesome attacks of insects would be very much mitigated. Fruit-growers, as a rule, give themselves too much to do, and have time to do nothing right.

VEGETABLE GARDEN.

The main crop of Spinage should now be sown. Properly cooked, there are few vegetables more agreeable to the general taste, and few families who have gardens will wish to be without it. It is essential that it have a very well enriched soil, as good large leaves constitute its perfection as a vegetable. As soon as the weather becomes severe, a light covering of straw should be thrown over it. A few Radishes may be sown with the Spinage for fall use.

Turnips also may still be sown. In fact, if the soil be rich, a better quality of root for table use will be obtained than if sown earlier.

Celery and Endive will still require the attention in blanching described in former hints.

Cabbage and Cauliflower are sown this month for spring use. The former requires some care, as, if it grow too vigorous before winter, it will all run to

seed in the spring. The best plan is to make two sowings—one early in the month, the other at the end. The rule is to get them only just so strong that they may live over the winter in safety. Many preserve them in frames; but they should have wooden sashes or shutters instead of glass, so as not to encourage them to grow much.

Cauliflower, on the other hand, cannot well be too forward. Most persons provide a pit of stone, bricks or wood, sunk five or six feet below the surface of the ground, into which leaves, manure or any waste vegetable matter is filled. When quite full, it is suffered to heat a little, when it will sink somewhat and have more material added to it; about six inches of good rich loam is then placed on it, and early in November the Cauliflower planted out. The object in refilling the leaves so often is to insure the plants remaining as near the glass as possible, which is very essential in the growth of Cauliflower. Lettuce is treated in the same way, and seed should be sown now to prepare for the planting. The Cabbage Lettuce is the kind usually employed.

GREENHOUSE.

It is a very good time to look around for soil for potting purposes. The surface soil of an old pasture forms the best basis, which can be afterwards lightened with sand, or manured with any special ingredients to suit special cases, as required. The turfy or peaty surfaces of old wood or bogs also come very "handy." A stock of moss should also be on hand for those who crock pots, in order to cover the potsherd; moss also comes in useful for many purposes connected with gardening, and should be always on hand.

Plants intended to be taken from the open ground and preserved through the winter, should be lifted early, that they may root a little in the pots. A moist day is of course best for the purpose, and a moist shady place the best to keep them in for a few days afterwards. Any thing that is somewhat tender had better be housed before the cold nights come. Some things are checked without actual frost.

Those who have greenhouses, pits or frames, will now see to having any necessary repairs attended to. White-washing annually is serviceable, destroying innumerable eggs of insects in the war against which the gardener should always take the initiative; sulphur mixed with the white-wash is also serviceable Powerful syringing is a great help to keeping plants clean, and should be frequently reserted to.

Propagation of bedding plants for another season, will now be progressing actively. Geraniums, and other things with firm wood, do best in sand spread on the open ground, with a glass frame partially shaded spread over it. A great benefit will be found in most cuttings if they are placed for a short time in slightly damp moss for a few days before inserting in the same, so that the wound at the base of the cutting may be partially healed or calloused over. Verbenas, and such cuttings, can be kept but a few hours, unless the wood is very hard. The harder the wood the longer will they do to keep so. Ripe wood of some things will be benefitted by keeping two weeks. All this must be found out by each propagator himself.

Ornamental annuals for winter-flowering should be at once sown, not forgetting Mignonette, to be without which will be an unpardonable sin. Chinese Primroses, Cinerarias, Calceolarias, Pansies, Polyanthus, &c., should be sown. Winter-blooming Carnations and Violets should not be forgotten. They are now essentials in all good greenhouse collections. The Calla Ethiopica, old as it is, is an universal favorite, and should now be repotted, when it will flower through the winter finely. Oxalis, Sparaxis, Cyclamens, and such Cape bulbs that flower through the winter, should be repotted now. They are an easily grown tribe of plants, and should be in more favor.

This is emphatically the Dahlia, as the next is to be the Chrysanthemum month. Dahlias have not grown much through the drought, and better not; now that September has come, they should be stimulated to grow, by copious waterings, and fine flowers will be the result.

[INGRAM'S LITTLE GEM.]

The taste for these flowers is reviving, considering what it was a few years ago,—for the Chrysanthemum particularly. Few tribes of plants have been so greatly improved, both by good methods of culture, and by the raising of new seedlings. Recently a new style of edged petals have appeared, which promises a popular reign with cultivators for they are very pretty indeed. The cut is a sketch of one. It is of a delicate lilac purple, and edged with white, as our engraving represents.

VINERY AMD FRUIT HOUSES.

Vines and other fruit trees in houses should have every chance afforded them of maturing their wood, which means that the atmosphere should be kept as dry as possible, and the pots or borders suffered to receive no more water than is necessary to keep the leaves from withering prematurely. A common fault is however to keep the soil of fruit trees in pots too dry. A dry atmosphere is the chief point to attend to.

Communications.

MY GARDEN EXPERIENCE.

BY Y., GERMANTOWN, PA.

Mr. Editor: Being made the wiser and more successful in cropping and adorning my small garden by reading the excellent practical and theoretical information, continually printed in the *Gardener's Monthly*, I feel anxious that your many contributors who are monthly benefitting me, and I have no doubt thousands of others, should also have my *practical* experience.

The Tomato Trellis.—Induced to give a trial to the new mode (which I believe it is) of training the Tomato vine upon a trellis, or any contrivance to keep the plants somewhat elevated above mother earth, I have tried the experiment for two years. Being informed that the fruit would be more abundant, as well as better in quality, and cleaner, I felt convinced it would be a better plan than the old system of giving them free range upon the ground, and I accordingly trailed every vine up. Now the result was, that I had a pretty fair crop of fruit, not sufficient, however, to supply my small family. Remember, sir, that previously they were grown in the old fashioned way, upon the ground, which gave a bountiful supply, and that much earlier, too, than upon the trellis, but they were not quite so clean as when kept off the ground.

But to prevent their being thus dirty has induced me to adopt another plan, which also enables me to dispose of the grass which is cut from the grass-plat from time to time. It is this:—The grass is cut and strewn upon the ground, around and amongst my tomato vines, upon which they grow, and it serves alike as a mulch in dry weather and as a preventive of the dirt dashing upon them during heavy rains. I think there is another reason for growing them upon the ground, which is that the vine at the joints sends out roots, which certainly serves to help it along. I feel assured that the mulching plan is a good one, and would be gratified to hear through the *Monthly* of others, if there be any, who have tried the plan besides myself. At this writing, (July 18), I have had fruit from my vines.

REVIEW OF AN ARTICLE ON THE CIRCULATION OF THE SAP.

BY YARDLEY TAYLOR.

In the fourth number of the *Gardener's Monthly*, present volume, is an article "on the Circulation of the Sap," by Charles Reese, Baltimore, Md., in which he asks, "what is the true theory of the circulation of the sap in exogenous trees and plants." It is true, as he says, there is "a diversity of opinion upon this subject," but as the science of vegetable physiology is yet in its infancy, we might expect this. However the time has arrived when theories in science must be based on facts; and facts are accumulating in such a way, that no doubt will ultimately lead to a correct theory.

The theory of a downward flow of sap, as supposed by the first writers on vegetable physiology is giving way, and writers of the present day assert there is no such flow, (see article "Botany" in the "new American Encyclopedia.") Theoretical writers, or those who copy from former ones, often advance the same theory; while practical men, who base their theories upon their observations of nature, reject it. Nurserymen who practice grafting, know that success only can be had by inserting the graft so that the inner bark of the graft of the stock shall be in contact, so as to admit of the sap from between the bark and the wood, passing upward into the graft between its bark and wood. There can be no other way for growth, as the granules of new wood only form from between the bark and sap-wood, no where else, and this material for growth must come from below, for there are no leaves above to prepare the matter for assimilation, as the downward theory supposes. Budding

as practised by nurserymen, is equally conclusive; there the bud only rests upon the sapwood beneath the bark, and in no contact with the pores of the wood at all, only with the pores between the bark and wood, and if the top of the stock is cut off, as is usual, it grows at once, though there is no part alone from which a downward flow can come. Many more facts might be mentioned, all leading to the same conclusion, but these so well known to all who are acquainted with grafting or budding may suffice, indeed the evidence appears to me to be so conclusive, that I can see no reason whatever for a downward flow. It appears to me to be too much of a round-about way to attain an object, to be consistent with what we know of the simplicity of nature's laws; they are always direct, and to be admired for their simplicity.

If then there is no downward circulation, as I confidently believe there is not, the question recurs "what is the true theory of the circulation of the sap." This to my mind is very simple and plain, whether I can make it appear plain to others, remains to be seen. Let us recur to facts generally admitted, and base our theory there. All writers on vegetable physiology, I believe, admit that, water from rain and snow containing matters for growth is imbibed by the roots, principally by the spongioles or small rootlets, though I have little doubt that even the large roots imbibe some, as their bark is spongy. Among these matters, carbonic acid gas is prominent, and it is generally believed that a portion of this gas is imbibed by the leaves. This gas is considered the only source from which the carbon of the plant can be derived. Carbon we know is deposited in growth, and chemists tell us that oxygen is given off in the day time. Other matters, as potash, &c., are believed to be carried into the plant in the same way; of these facts there is little dispute.

Carbonic acid gas, however, must be decomposed, and we know that it is, but by what means, there is difference of opinion. Sun light has been considered the agent of this decomposition, but of this there may be doubts. If there is no downward circulation, the gas cannot be decomposed in the leaves, as is by many supposed. Further, we have no other evidence, than this supposition, that sun light can decompose carbonic gas at all; nothing in my reading of chemistry would encourage the conclusion that sunlight can release oxygen from its compound. Some other agent then must be sought for, and we have one in electricity, that we know can effect this decomposition.

The beautiful art of electrotyping is evidence of this fact. Here metal is dissolved by acid, making a compound of oxygen and metal dissolved in water, when by the application of galvanism which is only another form of electricity, the oxygen is given off and the metal is deposited in its own form again. If electricity can release oxygen from this compound, why may it not from all its compounds. Oxygen is negative while carbon and metals are positive. This presumption has much stronger grounds for its foundation, than that for the effects chargeable to sunlight.

Electricity has been proven to greatly facilitate vegetable growth. If we erect wires, say ten or fifteen feet high, in an open space, and pass them beneath the soil where vegetables are growing, these vegetables near and above these wires will be larger than others at a distance. Here the electricity can add nothing of itself to the plants, it must act by inducing greater activity in some principle of growth, and what principle can that be, other, than the decomposition of the carbonic acid in the soil and vegetable matters within its reach, thus giving more carbonic to the plants. This is the only rational explanation that can be given, and it is to the point. (1)

Now let us apply these principles, founded upon facts. The carbonic acid gas being carried up in the sap, which is the water containing matters for growth imbibed by the roots, and this gas in passing principally between the bark and wood, where most of the sap passes, and where it is needed most for growth, is decomposed by electricity exactly where needed and deposited there, a small portion is deposited in the pores of the sap wood, thus making it more firm, and converting it into heart-wood. The sap being deprived of its gas brought up from the roots, principally near the lower part of the trunk or body, is further supplied by that received by the leaves, and this passing down through the sap as it is known that this gas has a great affinity for water, would supply all parts, and will mix with it in all directions whenever it comes in contact with it. Trees and plants are as conductors of electricity from the earth to the air, and from the air to the earth. Every sprig every point of a leaf, acts as a conductor for the fluid in passing. Some have doubted whether there is electrical disturbance sufficient to cause action enough to produce such an effect, but electricians have proved that the electricity of the atmosphere is very variable, that it is at its maximum at one time of day, and at its minimum at another. Hence when it is at its maximum in the air, the earth must be negative to it, and the earth will receive a portion, and

when at its minimum in the air, the earth will be positive, and then give off a portion to the air, thus keeping up a current between the air and the earth. Electricity having an attraction for water, will pass through the sap of plants in preference, precisely where the gas is to be decomposed.

Here then we have a theory for the circulation of the sap, at least for the requirement of growth, one that is plain and simple, yet meets all the requirements of the case, one that is based on facts that we do know, and but little left to conjecture. At the fall of the leaf in autumn the body of the tree has but little sap, the pores of the wood are mostly filled with air. During fall and winter, whenever the earth and the air is above the freezing point, the roots are imbibing moisture.—Whether this is by capillary attraction or not I leave, but presume it is by that power, as water will permeate every body not positively impervious, where there is less water. By the time that warm weather returns in spring, this sap thus lying in the pores through the winter, undergoes some chemical change, converting part into saccharine matter. This matter thus furnishes the nectar of flowers, and is conspicuous in early flowering trees like the maples for instance, that blossom early. Almost all trees will furnish sap at the first flow that may be made into sugar, but some, as the maples, more freely than others. This first flow of sap takes place in the winter often, when there comes warm days and frosty nights, and frequently when the ground is frozen; but the ground being frozen is no evidence that the tree and its roots are frozen, for living plants will resist a much lower temperature without freezing than dead matter will. The roots of trees are often far below the frost, and may be supposed to be a conductor of that temperature upward. As soon as the warm weather induces a full flow of sap, the saccharine sap is diluted and carried upward, and no sugar can then be made from the body of the tree. This full flow of sap fills every pore of the tree; and as the warm weather advances causes the buds to burst and the leaves to expand, and these then become the medium of giving off the moisture of the sap, leaving the matters for growth behind. Thus carbon, gums, resins, potash, &c;, are deposited each in its place. The philosophical editor of the "*Flores des Serres,*" of Belgium, says that the offices of the leaves are chiefly perspiratory, and "that they will be so acknowledged some day."—Many others are coming to be of this opinion.

From the great quantity of water known to be given off from the leaves of vegetables while growing, we may reasonably conclude that matter enough for growth is carried up by the sap to account for all we see, even supposing that the amount is small in a given quantity of water. The continual rising of this matter and being left for growth, would first make it appear as milky, as I have observed in early spring on taking off the bark of oak timber; as it becomes more dense it would assume a jelly-like appearance, as I have witnessed in taking off the bark of apple trees, about the 20th day of the first summer month, to try to cure such trees of the bitter rot. Then again at the fall of the leaf, it has become firm wood, and at this season there is little water in growing wood, less than at any other time. This amount of water however, somewhat depends upon the wetness of the season. In late summer and early fall, we often have dry weather, favorable for well ripening wood, but sometimes we have wet in the fall so as to start late growth, we then know that such late wood is not able to stand the winter safely, but is often injured, particularly if cold sets in early. Late growing plants are more liable to be injured in this way, than those that perfect their growth early. The oak and similar trees, that never start into second growth the same season, do not suffer in this way.

We have reason to believe that the roots of perennial plants, take in water as sap, at all seasons, except when interrupted by drought or frost, either of which prevents it. Thus in fall and winter in mild weather, a supply is laid up for active use when the warmth of spring shall induce active growth.

My friend, Chas. Reese, in his essay, speaks of "the general circulation of the plant becoming more and more obstructed by congregation of albumen, starch, sugar, &c., in the alburnum and cellular tissues of the medullary rays, the spiral canals in the medullary sheath and pith of the newly formed wood, &c." There is reason to believe that the obstructions to the circulation, are mainly due to want of heat, and when the temperature reaches to the freezing point all circulation must cease. Such matters as sugar, starch &c., are I presume eliminated or brought out by chemical action of these matters in the sap, during the slow motion or entire stoppage of the circulation during winter and before the full flow of sap in spring, for when this takes place no sugar can be detected. Hence his remarks of the "rush" of the sap "into the alburnum converting starch into sugar," &c., I think is a mistake, for we find very little sugar after the sap begins to flow freely.

Some writers have asserted, that "the medullary rays" are the connection between the pith and the buds for future growth; however, this may be for the first year of growth, it cannot continue long, for the pith in a few years is dry and appears inactive. My estimate of the use of the medullary rays is quite different. Let us examine an oak tree for instance, for here they are larger than elsewhere. They there pass out from the wood into the bark, and are evidently designed to keep the bark in its place in the season of growth.

What would be the effect of the expansion of the trunk without them? the bark must burst, and now it bursts in many places a little in a place; but in that case it would first burst in the weakest point, and then nothing to hold it; would increase in one or but few places, and make a wide opening, too much so to grow up in one season of active growth. It is no uncommon thing for one years growth of a thrifty tree to be half an inch thick, making the circumference three inches more at the end of the season than at the beginning. Suppose this three inches to be opened all in one place, what would be the effect. Nature always provides against such contingencies, and here by passing the medullary rays into the bark it is held in place, and compelled to burst in many places, so that there is no difficulty in filling up those places by new growth.

He also speaks of the particular circulation in each of "the buds or new system," and supposes that "the congealed fluids," after being dissolved, "pass downwards, enters the medullary rays to the spiral vessels in the medullary sheath, through which they ascend, and flow outwards through the medullary rays again to the bark, thus forming a complete circle."

I have never seen anything to satisfy me that there is any regular downward flow at all. If we cut into a tree or vine when they are full of sap, a small portion will flow downward, and but a small portion only, for the larger portion will flow upward. The regular flow only is upward. He seems to be puzzled to know if "there was no descent of sap through the cellular tissues of the bark to the roots," where could all this sap go to that "would rise in two months at the ordinary speed of ascension." I am surprised at his wonderment; he certainly is well enough acquainted with filling vessels with fluids, to know that when once full they can hold no more, and no more can be forced into them. The same with his vine, it is filled with sap early in the season, and if then cut it will run sap whenever the warm weather prevents the circulation, until the leaves expand, and then it will not do so.

There is no doubt that a small evaporation takes place through the bark of trees and vines, and this amount the roots may supply, but further than this they cannot force the sap into the plant after being once filled until the leaves open.

I have been pleased with his remarks on "the works of Infinite Wisdom" and bringing this into views in investigating the laws of nature. This is right; the more we examine them, and become acquainted with the laws by which they are governed, the more we see to admire, the more evidence we have of Divine Power and Love, and the more we are led to admire and adore. There is one view however advanced, that I do not fully accord with, or it may be only in the manner of expressing it. There is a "general circulation of sap in the whole plant," admitted, and "a particular circulation in each of the parts, assumed, as in the seed, bud, gum," &c. Now it seems to me there is a general circulation throughout, supplying substance to each part in particular, and cannot be a particular circulation in each part. There is this, however, every plant possesses the property of so distributing matters brought up for sustenance, that each part may receive that most needed for its perfection. Thus the wheat plant for instance in growth, will deposit silex in the straw and chaff, to give it strength, gluten and starch in the grain, magnesia in the bran or skin of the grain, and all separate and distributed from the matters derived from the earth and the air. So of all other plants. It is one general circulation distributing to each separate part its appropriate pabulum. But when these parts are perfected, and they separated from the parent plant, then a particular circulation in regard to them is begun; the bud for instance, if it is placed in a condition somewhat similar to what it occupied on the parent plant, that is, if it can obtain water as sap, can be supplied with heat to promote growth, and obtain matter from the earth for growth, it will form a new plant as perfect as the one from which it was taken. So of the seed, the gum, the cutting, all producing the same variety of plant.

Thus I have given in a concise manner my views of the circulation of the sap, and these conclusions have been mainly made up from experiment, and I cannot help conceiving that if all would refer to experiments as the base of their theories alone, they would arrive at the same conclusion. It is so much easier to take opinions of others, than to investigate for ourselves, that it is not to be wondered at, that untrue theories continue to be enunciated by writers, particularly in a science so lately

brought forwarded as vegetable physiology. But as facts are to be taken before conjectures, and as experiment is to be the basis of all true philosophy, so we may expect to see ere long a theory of the circulation of the sap, based upon principles supported by experiment and facts, alone.(2)

[(1).—We have a strong impression that the Horticultural Society of London, about 18 or 20 years ago, instituted a set of careful experiments to test this theory, and that they came to the conclusion that no perceptible difference could be detected in the crops electrified, and those not.—We have no record of where an account of these experiments may be found published, but perhaps some of our correspondents may be able to furnish the information.

(2) We cannot refrain from commending our correspondents concluding remarks. It is lamentable to find writers on physiology referring at this late day to no other than the old experiments of Duhamel, Malphigi, Grew, Knight, and other old experimentors, for all we ought to know on the subject. We value Mr. Reese's article particularly, on this account, that it was founded on original observations; and we are also pleased to have now the remarks of another, who equally endeavors to understand the past experience of others, by comparing it with observations he can himself make.

NEW METHOD OF CULTIVATING THE MUSHROOM.

BY DR. L. DOVILLIERS, NEWPORT, R. I.

Dr. Labourdette has succeeeed in raising Mushrooms on bare ground, without manure, by substituting to the latter Nitrate of Potassa. The nitrate is buried in the soil, with the spores of the Agaricus about an inch deep. This soil is solely composed of Sulphate of Lime, beaten firm. The variety thus produced is six times heavier and larger than the common Agaricus campestris.

For those who would like to try the experiment, I will add a few details:

The mushrooms are first brought out by putting spores on a pane of glass, covered with sand and water, and the largest specimen chosen.

First. A damp ground, composed of vegetable loam in a cellar, is covered with nine inches of river sand and gravel; then, with a layer of six inches of plaster from old walls. The soil is watered with water containing two grammes (15,434 grains) of Azotate of Potassa, for every three feet square after sowing the spawn in it. Mushrooms of large size can be obtained in six days. The action of the Azotate of Potassa is perceptible for several years afterwards.

GARDENING AND THE WAR.

BY M. C. B.

Every man's eyes are looking towards Eastern Virginia. Every man of us has a stake in that army and watches its every movement. Every such movement must bring desolation to some family in the land, and every family prays that the bitter cup may pass them. Every man follows his profession or trade, but the hammer does not come down many times without the head connected with that hammering arm thinking somehow or other of the war. Not a bargain is struck, not a bonnet hardly discussed, but war creeps into the conversation, and claims its share of that as well as it does of the thoughts of the talkers. The food most craved is the newspaper, with its tales of horrors, and its leading, or, as the case may be, misleading articles.

Can human nature stand that? Will the strained nerves bear an ever continued pressure?

Certainly not, and according to the law of action and reaction, the evil corrects itself. The wearied, worried, war-hunted individual flies to the counter-stimulant to regain his balance. That old gentleman who has swallowed the contents of two newspapers before breakfast, puts away his glasses with the determination of drowning his brains in his business. Another man finds in the war an excuse for drowning his thoughts in liquor. The younger people perhaps consider flirting and courting a very wholesome counter-irritant. They do not all succeed though; and so they begin, instead of trusting to accidents, to look about how to escape successfully the ever present war.

This explains the immigration of people to the watering-places, the country, the mountains, to their eastern or western cousins, to the seashore, to the fishing-banks, to sweetwater fishing, and to the hundred-and-one sorts of airings which we see kept up, in spite of the serious war.

We would like to propose another remedy, *warranted to cure* all except, perhaps, *your* readers, It is Horticulture. All of your readers, probably, have already an interest in some garden, and we won't carry coal to New Castle simply because it is not wanted there. But your readers know, each of them, scores of people who own no garden and these will be benefitted by having pointed out to them the wonderful balm which gardening is to the mind, the salutary tonic it is for the soul. The overtasked mind finds but poor relief in a novel or

a journal; the all present war *will* creep between the lines and occupy the brain, even as the eyes mechanically take in the letters. The mind rather wants the body to come to its aid and restore the level. Manual labor drawing on our mental faculties, whilst we practise it, is the sort of work best suited then.

The person who has no garden of his own may beg a corner of one, and experiment there. Or he may dig up and prepare a piece of ground for next year. Best of all if he can this fall plant some trees or shrubs. Does he live in the city and has he no yard, let him raise some pot plants. And, whether he live in city or country, he can plan and execute a cheap glass house, such as has been often discussed in the *Monthly*. Possibly he will get interested sufficiently to go and find models. If so, he will walk about and throw his critical eyes on gardens and greenhouses, admire and find fault, get captious or fascinated. Whichever way he may go about he will learn something, and—here lies the secret: any thing we acquire a knowledge of gives satisfaction, and instigates to further search of knowledge. This is the true way of recruiting the soul and the body, and no pleasanter knowledge is there to learn, your readers will grant me, than that of raising flowers, vegetables and fruits. So let us, all of us, in the midst of war enlist our friends in the cause of horticulture, for their own and for the country's benefit.

CHILI STRAWBERRY.—*FRAGARIA CHILENSIS.*

Les Chiliens of the French.

BY W. R. PRINCE, FLUSHING, N. Y.

THIS noble species was carried to Europe from Conception, Chili, in 1812, and was first cultivated at Brest, where it flourishes marvellously. It was not introduced to the gardens of England until 1727. It requires a greater degree of heat for its full development than the other southern species, the grandiflora, although its native locality is far less tropical; which fact arises doubtless from the circumstances that the former is a native of the Pacific side, and the latter of the Atlantic side of our continent: the climate of the former being much the mildest in corresponding latitudes. It has consequently resulted that but little progress has been made in the culture of this species in northern continental Europe, and none whatever in England, to which countries the Strawberry culture is most confined of the Eastern Continent. The foliage, flowers and fruit of this remarkable species are larger than those of any other species; the fruit often attaining, in its native country, the size of a medium hen's egg.

The leaves and flowers are not so tall as those of the F. grandiflora; leaves silken, very downy beneath, borne on hairy petioles; the large flowers often have their petals convolute or plaited: they are unisexual and hermaphrodite. The fruit becomes upright before maturity, whereas, in all other varieties, the berries are pendant; they are yellowish white shaded with vermilion, and others clear yellow or orange; often of monstrous size, variable in form, flesh blush, rosy or yellowish, in the different varieties. The plants require a warm, sunny position, and a strong rich garden soil, permeable and not sodden; peat mould suits them well.

It appears that but one sexual variety was introduced to Europe in 1712, and they have never obtained any other; thus in their culture and production of new varieties always laboring under a great disadvantage, the result of which has been the entire discontinuance of its culture in England and Germany, and the production of only a few bybridized varieties in France. The flowers are among the last to expand, and the fruit is the latest in maturity of all the large berried varieties, and it is followed only by the Alpines.

Fortunately we are in possession of both the sexual varieties, and our warm, sunny climate bestows on us great advantages over the cold and humid climates of northern and middle Europe, to which the Strawberry culture is there confined; and we are enabled consequently to obtain superior and genuine seminal varieties to any extent, as well as hybrids between it and the grandiflora varieties.

The original species, which is found growing under the western slope of the Andes, near the Pacific ocean, in latitude 36° would thus indicate that it is best suited to our states south of the Potomac, but the acclimation by seminal varieties is each year presenting us with such as are more hardy and better suited to the Northern States. The finest varieties we at present possess, are the following:

Champion—Light scarlet cone, hybrid.

Chili, pale red—Monstrous, flesh rosy.

Chili, orange—Large, round, very sweet, perfumed.

Chili, white—Rosy white, rare.

Chili, yellow or apricot—Large round, very sweet perfumed.

Chili, bright roscate—Large, sweet, delicious.

Chili, light scarlet—Extra large, sweet, delicious.

Chili, vermilion—Very large, sweet, extra.

Chili, rosy orange—Very large, perfumed, exquisite.

Chili, pale orange—Monstrous, ripens late.
Chili, Daubenton—Large, oblong, late.
Conception, red—Very large, *pistillate.*
Huntsman—Hybrid, light scarlet, *pistillate.*
Hybrid Oblong—Large, pale red.
Iouna—Round, salmon, white flesh.
Lamana—Large size.
Large Algiers—Round, very good.
Lucie—Large, very late.
Orange Globose—Large, very sweet, perfumed.
Primate Bagnolet—Large, very beautiful.
Souvenir—Large, very late.
Wilmot's Superb—Monstrous, deep red.

INSECTS ON CITY TREES.

BY DR. JOSEPH LEIDY, PHILADELPHIA.

July 22d, 1862.

To the Select Council of Philadelphia:

GENTLEMEN—You have done me the honor to invite me to give to the Councils of the city such information as I may possess in regard to the insects which injure our shade trees.

I shall be most happy to communicate to our respected Councils any knowledge I may have on this or other subjects, which may be considered to be of utility to my fellow-citizens.

The shade trees of the city contribute to the beauty, its health and apparent cleanliness; and no reasonable pains nor expense should be spared to preserve them. The Silver Maple is cultivated too much to the exclusion of other trees, as it is one of the most liable to the depredations of insects. The Sugar Maple, Red Maple, Sycamore, Horse Chestnut, American Linden, Silver Poplar, &c., should be more frequently employed. The Ailanthus, notwithstanding its offensive odor during the flowering season, is an important shade tree, on account of its comparative freedom from the attack of insects. Introduced here and there to break the series of Maple along the streets, it would tend to retard the distribution, and in a measure to restrict the ravages of the Canker-worm and other insects.

Naturally, birds are most important agents in preventing an undue increase of insect life. In cities, the conditions in general are unfavorable to their existence, though to a limited extent they might be induced to take up their abode with us. A friend who has devoted much observation to their habits, informs me that the want of easy and undisturbed access to water in some degree prevents them from living in our public squares. To remedy the defect, he proposes to introduce into the latter, in convenient positions, shallow basins supplied with water from a hydrant, the whole to be enclosed in groups of shrubbery. This is an excellent suggestion, easy of accomplishment and worthy of trial. The groups of shrubbery would present an additional advantage; by breaking the monotony and restricting the view of even grounds, they would enhance the beauty and increase the apparent extent of the squares.

The squirrels have been accused of indirectly favoring the increase of insects by driving away birds. This is a mistake, as the canker-worms were just as bad upon the lindens, before the introduction of the squirrels into the squares, as they are now upon the maples.

As a general measure, to moderate the depredation of insects, I would recommend an occasional examination of the trees. The trunks and larger branches should be swept with a stiff brush, so as to remove adherent insects, cocoons and eggs.—Places on the trunk where the bark has been destroyed and the wood exposed form convenient concealment to insects, should be cleaned. The surroundings of the trees, also, as the tree boxes, fences, &c., should be swept, and the collected debris should be destroyed. Dead and curled up leaves, often spun together with the webs of insects, should be shaken from the trees by means of poles.

I would further recommend the introduction into our public squares of a few turkeys, guinea fowls and chickens, which destroy all insects which come within their reach.

The more destructive insects of our shade trees which I have noticed, are the canker-worm, the scale bug, the tufted caterpillar, the sack bearer and the borer.

1. The common canker-worm, span-worm, or measurer, I apprehend will prove to be a nuisance difficult to remove. The insect belongs to the same family as the canker-worm, which has proved very destructive to fruit and shade trees in New England, but it is a member of a different genus. It is figured by the German entomologist Hubner, under the name of *Eudalmia subsignaria.* The young worm appears shortly after the putting forth of the leaves of the silver maple, which appears to be the favorite food of the insect, though it does not despise other trees. The worms grow until about the middle of June, when they enclose themselves in a case or cocoon of coarse lace work, which they construct among the debris of the leaves which served them as food at the ends of the branches, or in the interstices of the bark on the trunk or upon the tree-boxes, neighboring railings, fences, &c. Within the cocoons, the worms undergo transformation into a grayish pupa, about

half an inch in length. The pupa remains quiescent until the end of June or the beginning of July, when a white moth or miller emerges, which may be seen in the dusk of the evening, flickering actively among the boughs of the trees. The female deposits her eggs, which at first are of a green color, but subsequently assume an olive brown hue, in patches on the limbs and twigs, where they remain until the succeeding spring to furnish new colonies of worms.

Of the many canker-worms produced, the greater number are destroyed in various ways. Cold weather and rains kill a great many. As they let themselves down by a silken thread, upon any slight disturbance, many fall to the ground and are liable to be crushed. They suffer most, however, from the attack of several species of Ichneumon. This is a genus of active, wasp-like insects, which pierce the canker worms and deposit in their interior an egg. From the latter is hatched a maggot, which feeds on the internal parts of the canker-worms. Many of these survive the pupa condition, but instead of the moth there emerges a bright Ichneumon, ready to pursue the career of its parent in destroying noxious insects.

In regard to the means of destroying our canker-worms, several of those which have been resorted to for the destruction of others of the family will prove equally effectual. Infusion of tobacco stems, or a solution of whale oil soap squirted on the trees will kill the worms without injuring the foliage, especially in May, while the worms are young and tender. As these articles may be too expensive for general application, it would be worth while to try a weak solution of mineral prism, as I have been informed by an acquaintance, that in this manner he succeeded in getting rid of insects upon his trees without injuring the foliage in the slightest degree.

Shaking the boughs with a pole will dislodge many of the worms, which then let themselves down by a thread, when they may be knocked off and crushed; or they may be prevented from regaining their position among the foliage by means of a tar collar, or an oil-trough collar encircling the trunk.

After the worms have passed into the pupa condition, the webs and debris of leaves spun together, and often concealing many insects, should be shaken from the trees, collected together and destroyed. During this period also, from about the second week to the end of June, the trunks of the trees and the neighboring tree-boxes, railings and fences should be industriously cleaned of all adherent cocoons, pupa and webs, and the material collected should be burned or scalded. Turkeys, Guinea fowls and chickens are very useful in destroying insects. They not only eat the canker-worms, but search industriously after their pupa and moth. A few of these fowls introduced into the public squares would prove of great service. Even the squirrels would be useful by disturbing and dislodging the worms, and thus bring them within reach of the fowls.

2. The scale-bug, *Coccus aceris*, though not a nuisance, like the canker-worm, is nevertheless an injurious insect to the Silver Maple. It belongs to the same genus as the Cochineal, so well known for its valuable red coloring matter. The scale-insects are conspicuously noticed, in May and June, adherent to the under sides of the branches of the maples, as white masses almost the size of peas, each surmounted with a brown scale. The latter is the female, with her proboscis inserted into the bark, and her abdomen tilted up by a mass of eggs enveloped in a cottony substance. The young emerge from the eggs during the summer, and wander among the branches. They finally fix themselves upon the latter, insert their proboscis through the bark, and thus remain without changing their position until the following year, when they develope the masses of eggs as above mentioned.—When numerous, these insects exhaust the tree by depriving it of its juices. They are readily removed by means of a stiff brush attached by a pole. This should be done in May or June, and is easily accomplished, for the insects congregate mainly on the under sides of the longer branches, where they can be readily reached.

3. The tufted caterpillar, or vaperea moth, belonging to the genus Orgyla, is observed on most shade trees, fruit trees and rose-bushes during the summer months. The caterpillar is yellow and hairy, with two long black pencils diverging from the first ring back of the head, and a single brownish pencil projecting from the eleventh ring. The fourth to the seventh rings are furnished on the back each with a short dense yellow tuft. The head is red, and there are two bright-red spots on the ninth and tenth rings.

This caterpillar formerly proved quite destructive to the foliage of many of our shade trees, but in later years its numbers have been comparatively small. After reaching its full growth, it descends upon the trunk, where it remains, or it proceeds to some neighboring fence, tree-box, &c., and constructs its cocoon. This it does by detaching the hairs of its body and spinning them together with

silk. The moth escapes from the cocoon in about ten days or two weeks. The female is wingless, and lays her eggs upon her cocoon, protecting them with a white frothy substance.

The cocoons of this insect observed in the crevices of the bark, or on neighboring fences, walls, railings, tree-boxes, &c., should be brushed off and crushed. This may be done any time after midsummer.

4. The sack bearer, drop worm, or basket worm, a species of oiketicus, is among the most curious of insects. It is common on our shade trees, but especially infests the maples, larches and arborvitæ. Just at this period, July, the writer observes a large number on the cypress trees in front of the U. S. Mint, on Chestnut street.

The worms, after escaping from the eggs, immediately compose for themselves cases composed of silk interwoven with fragments of their food resembling in this respect the Tineans or carpet and clothes moths. As the worms grow they enlarge their silken and leafy habitations, until they reach an inch or two in length. In the latter part of summer these insects are often noticed dangling from the trees of our sidewalks, suspended from the boughs by a silken thread, and enclosed in a dark, rough, spindle-shaped sack. They never leave the latter, but where they have reached their full growth they fasten their silken case securely to a branch of the tree, and within it undergo transformation with a pupa. From the latter is produced the moth, the male of which awaits the night to leave his habitation in search of a mate.—The female never leaves her silken dwelling, nor does she ever throw aside her pupa garment; it is her nuptial dress and her shroud. Within it she deposits her eggs, enveloped in the down stripped from her body. The eggs thus protected, and enclosed within the mother's habitation, remain suspended from the branches of the tree, secure from storms and the cold of winter, until the following season.

As in the case of the canker-worms, many of the sack bearers are destroyed by Ichneumons. The sack bearers, if unmolested, might become a serious scourge to our shade trees. They are easily destroyed; all that is required to get rid of them, is to remove their silken cases when the trees are trimmed in the spring. With the cases, the accumulation of eggs is destroyed, which otherwise would give origin to new colonies of worms.

5. The borer of the maple is a transparent winged moth of the genus *Aegeria*, the same to which belongs the injurious borer of the peach tree.—The larva, or insect in its early stage of existence, is a grub which lives within the trunk and larger branches of the silver maple, upon the sap-wood and inner bark of which it feeds. Old maple trees are not unfrequently observed with their trunks completely riddled by this insects. The larva is transformed into a brown pupa, which after remaining in a quiescent state for some time, finally works itself along its burrow and protrudes half-way from its aperture, so as to allow of the escape of the perfect insect.

The borer is injurious to the maple by impairing the strength of its trunk; the insect, however, has not committed such injury as to prove serious, or require especial attention.

[Dr. Joseph Leidy, of the Philadelphia Academy of Natural Sciences, has a world-wide reputation for his scientific acquirements, and it is a hopeful sign of the times when we find city goverments applying to such men for information on matters within their province bearing on public affairs.—The communication gives so clear an account of the most common city tree insects, that we copy it entire for our readers, merely remarking that we see no good reason for the depreciatory views of the Silver Maple. They suffer worse just now from the attacks of insects, but when they are removed, we judge others will suffer as badly. We would wage war on the insects, not on the trees. The recommendation of the Silver Poplar is equally objectionable. Its suckers take as much looking after in city gardens as the caterpillars do.

The recommendation to provide water and shelter for birds in cities, is a good idea, and if any scientific effort were made to aid the birds and Ichneumons by "hand power," we have no doubt the insect nuisance might be kept pretty well under.—Ed.]

NOTE ON GRAPE-VINE BORDERS.

BY WILLIAM SAUNDERS.

The nature and arrangement of the soil most advantageous for the growth of the grape has properly been held as a point of primary importance in the culture of that fruit. With reference to the nature of the soil, it may simply be remarked that its physical condition, its relation to air and moisture, is of greater import than its mere chemical constitution. The soil should, however, be so situated as to receive a free and unimpeded access of the atmosphere, and arranged so as to admit of all necessary additions required to maintain health and fruitful vigor in the plants. It has occured to me,

that there is room for improvement in this respect, and I therefore offer the following suggestion, which I have found of much value, and it may be useful to those about planting graperies.

About 50 to 60 days after the grape commences growth, there will be found an emission of young roots from the stem, immediately at, or slightly above its point of contact with the soil; these roots, unless in a very damp atmosphere and under continual shade, shrivel and disappear, but if encouraged by being covered with a thin layer of soil, they will rapidly spread and ramify into it, and with obvious and decided benefit to the crop.—Those who have had an opportunity of removing or transplanting old vines will have observed the great amount of dead roots, and the comparatively limited quantity of sound healthy fibres, and also that the latter were near the surface and of recent emission, showing the tendency to a periodical production of new roots from the base of the plant. It will, therefore, be found, that if an annual top dressing of soil, amounting to a strata, two inches in thickness, be spread over the roots, about the time mentioned above, the plants will speedily supply themselves with a new system of valuable roots. It will be surmised that the soil for this purpose should be light and rich, and well pulverized, a few months previous preparation of the compost will also be an obvious necessity.

There are, however, few graperies constructed so as to admit of this annual addition to the soil for a series of years. The borders usually being filled to the desired height at once, additional allowance being made for its sinking. I therefore suggest the utility of arranging the border so as to allow of a periodical application. On a border recently made, I have left a space of about one foot for this purpose.

At a former meeting of the society, Mr. Meehan made some remarks upon the facility with which roots are produced in wire baskets, (as also the more equable degree of moisture retained about them,) owing to the permeation of air through the covering of moss on the wires. The principles involved in producing these effects were clearly propounded, and could not fail in being instantly recognized by all observant cultivators. Being anxious to secure, if possible, these conditions in a grape border, I had a series of parallel drains constructed on the bottom of the border, so closely together as really to produce almost a continuous opening over the whole space, nearly 10 inches high. These drains were made of rough stone, built culvert fashion, the supports to the covers being as few as possible. The interstices between the covers were filled with small stones and the whole surface made somewhat even. Then a layer about 6 inches in thickness of small stones, gravel and pounded oysters shells was spread over it, the whole being covered with a layer of forest leaves to prevent the finer particles of soil from dropping through. The object aimed at, being that of producing a permanent effect in the border, as nearly similar as possible to that secured by the covering of moss on a wire basket. At one end of the border a large opening is left to admit air into this underground chamber, and at the opposite end a communicating chimney about four feet above the ground level is built, the latter to produce a circulation and interchange of air.

The border alluded too, is that of a forcing grapery, and is, of course, made altogether inside of the house.

The soil is only about 10 inches in thickness, well mixed with correctives to keep it porous, and although it may be rather early to speak of results, yet the equably moist condition of the soil, in the absence of frequent waterings, has already been the subject of remark.

"THE BEGONIA,"

BY J. P. NORRIS, WEST CHESTER, PA.

Having had great success with this tribe of plants, I will briefly detail my mode of growing them:—

They require a soil composed of two parts compost and one part sand. The variegated-leaved varieties require shade, though on the contrary the *Begonia Sandersii*, or the *Begonia fuchsoides* will do very well as border plants.

Of all the variegated leaved varieties, the *B. Rex* I think the finest. It is too well known to need description. The one that ranks next in my opinion is the *B. Madam Wagner*, which is of a very light silvery green with a dark green centre. *B. Von Richenhamii* is very handsome, it is white, the veins being followed up by green. *B. Madame Alwert* somewhat resembles the *Rex*, but the Zone of Silver is broader and the edge is also dotted with silver. *B. Zanthina* is entirely of a dull brown, with the underneath of a bright red.

Of the tall growing Begonias that bear flowers, *B. manicata*, *B. Sandersii* and *B. sempervirens*, with *B. fuchsoides* rank first.

I must now say a few words about the propagation of the Begonia. There are, I believe, two ways which are in common use. First, to take the leaf and break the principle veins about two inches

apart, now if the leaf be laid flat on its back in *pure river sand*, (or as it is sometimes called, "silver sand,) young plants will shoot up where the vein was broken. Second, Take a leaf and cut in small pieces and set it edgewise in the sand, and a young plant shoots up. Both ways are good, but I prefer the last, as it is the most certain. When the leaf is laid flat on the sand it is liable to rot, but the latter way never fails. As I am afraid I have occupied too much of your valuable space, I must close.

[Not too much certainly—we shall be glad to hear again.—Ed.]

THE EVERBLOOMING ROSE.

BY WALTER ELDER, PHILADELPHIA.

If there is one species of plant in whose culture we excel above the people of other nation,—if there is a species that gives more gratification and lasting pleasure than another,—or, if there is a species that is at home in all places and with all people, under proper care, it is the Everblooming Rose. If a person grows but one plant, let it be an Everblooming Rose. With good soil and usage it thrives and blooms in an old tea-pot, in the window of the poor as well as it does in the costliest vase in the conservatory of the wealthy,—as well at the door of the plain, humble cot, as on the ornamented verandah of the magnificent mansion.

When there was only the yearly-blooming species and variety, it was worshipped, admired and eulogized; philosophers and historians wrote of its praise; orators lectured on it, poets sang of its matchless beauty, and sculptors and painters pictured it. When so much adulation was bestowed on the plant that gave a month's pleasure annually, what language is sufficient to chaunt the praise due to the species that affords us a perpetual feast of beauty and fragrance.

Verbenas, Petunias, Pansies, Geraniums, Salvias, Carnations, Pinks, Lobelias, Nierembergias, all kinds of bulbs and tubers, and a great host of annuals, are delightful in their beauty and continuous blooms, and give splendor to the flower-garden; and Hyacinths, Sweet Alyssum, Scented Geraniums, Helitropiums, Mignonette, and many kinds of shrubbery, have beautiful blooms, and perfume the air around them with their fragrance; each and all have their admirable qualities,—but the Everblooming Rose combines the virtues of them all.

If there is perfection in the vegetable kingdom, it is the Everblooming Rose. Its varieties are now so numerous, their colors so various, and natures so different, that they are arranged into five distinct classes. Some can be grown in all climates and altitudes, and upon nearly all kinds of soil. They are fit to make a diversified garden of themselves: growing as dwarf bushes, as tall stately plants, and clothing arbors, bowers, trelliis-work, dead-fences, &c., and even making hedges to fence in and shelter the garden. They are the monarchs of the flower-bed, and reign triumphantly glorious over all other flowers; and blessed are they who possess the means, the liberality and fine taste to purchase all kinds, and the space to grow them in perfection.

The *Hybrid Perpetuals* or *Remontantes*, are generally of a stately, robust growth; thrive equally well upon heavy and light loams, and withstand a northern winter without protection.

The *Bourbons* are next in hardiness, and do best upon loamy soils, yet a slight covering of straw tied around them in winter north of North York, is of advantage to them.

The *Bengal*, *Chinese* or *Daily*, is next in hardiness, thrives both in loamy and sandy soils, and is preserved better by having a little straw tied about them north of Philadelphia.

Noisette is of the same hardiness as Bengals, and thrive upon the same kind of soils. The varieties are nearly all of a rampant growth; useful for training upon fences, ends of buildings, arbors, trellis-work, pillars, verandah frames, &c. The flowers are generally small, double and very fragrant, and produced in clusters of twenty and upwards.

The *Tea-scented* is generally of dwarf growth, profuse in bloom and of the most delightful fragrance, which is diffused a great distance. They are less hardy than the other classes. and need a covering of straw in winter north of Baltimore. They thrive best upon light loams and sandy loams, and will flourish in sandy soils. They grow to most perfection out-doors south of Maryland, and are the best for pot culture.

All the varieties of the five classes can be grown in the most northern climate by digging them up and potting them in fall, and keeping them in cold frames or pits half sunk and half banked-up, and with glass sashes, and covered with mats in very cold weather, shading them from bright sun in the winter time. As hundreds are yearly putting up cheap glass structures in which to grow foreign grapes, they are the best places to winter roses that cannot stand the severity of winter, as the grape-vines are dormant in winter, and the roses would not be in their way, and they get the full light. With these advantages people in northern latitudes

can grow all kinds, and well will they be rewarded for their care.

What is a garden without a Rose! As it lasts many years and takes deep root in the ground, the soil before planting should be stirred two feet deep and finely pulverized and enriched with short manures throughout. The black surface scrapings in woods, which is leaf mould, is the best manure for all kinds of roses.

The *Ribbon system* of planting beds can be beautifully carried out with Everblooming roses. Suppose that we have an oval bed with Souvenir de la Malmaison, Sombrieul and Madame Bosanquet; along the top, in a row, and three feet apart, and three feet from the bed; a ring of Hermosa, Arch Duke Charles, Pink Daily, etc., three feet apart, also in the row, and three feet from the latter, and a ring of Louis Phillipe, Abbe Mioland, Eugene Beauharnais, etc., say thirty-three inches apart in the row, three feet from the last, with an outside row of Devoniensis, Bougere, Victoire Modeste, etc., or Indica alba, Mad. Bravay, etc., also thirty-three inches apart in the row; what a most beautiful effect it would give to the lawn or flower-garden. If the bed is a circle, put Glorie de Dijon in the centre, or a Geant des Battailles or Prince Albert, each of the stately growth. The soil should be frequently hoed around them, but not too smoothly raked; when it is rough the rains do more good, as they do not run off so readily. The beds should not be elevated, or but very slightly. A top-dressing of rotted manure or leaf mould should be spread over the surface every fall, and very shallow dug in spring; deep digging will injure the roots. No other flowers should be planted among them. Cultivators should consider roses to be flowers of themselves, and grow them to perfection. Let them have the whole fertility of the soil; surface-flowers growing among them take all the substance of manures, and the benefits of summer showers,—and the roses deteriorate until fall rains moisten the soil at their roots, and complaints are made about the Roses not blooming well in hot weather. May is the best time to plant.

TREATMENT OF BRUNSVIGIAS.

BY "INFORMATION."

I SEE one of your readers inquires how to flower the Brunsvigia. Having several bulbs of B. Josephinæ and B. falcata, I flowered them by the following treatment:—I keep them in 15 inch pots. At this (March) I have them growing vigorously. I keep them well supplied with water until they begin to show signs of going to rest, which is about the time I turn may plants out of doors. I then gradually withhold water till the foliage dies off, then I place them under a southeast wall, along with Hœmanthus, Nerine and other cape bulbs, which I treat in the same way. After putting them out of doors I never give them any water until I see them throwing up their flower stem, which with me, this last two years, has been about the first of August; then I begin to attend to watering them. I counted thirty flowers on one stem last fall. I keep them in the greenhouse during winter.

EVERGREENS.

III.—THEIR APPLICATION.

BY F. LITHCOMBE, VA.

It will be at once conceded that it is not possible to lay down rules for planting landscapes or gardens. The only rule that can be given, is to plant according to the ground you have in hand.

If a man lives on the mountain rise, and has to build his residence where nature must be conquered to be borne, then of course his aim will be to dispense consistently with Evergreens. But if he go there from choice then let him take his cue from nature and let evergreens rule. He will easily succeed with Castle Serious, nay if he indulge in the wild and the terrible, he still may be in harmony with creation around him.

But if a man lives on the plain, the level plain and naturally craves for that mixture of vegetation and for that variety of aspects which nature has denied him there, then the task begins. He will want to engraft on nature those charms. Now has he the chance to overcome obstacles. Here, artist, is the ground, here commence! Such artist, in such a case, will, I fancy, nurse all the little inequalities of the ground, raise terraces, if ever so shallow, form mounds, and again hollow the depressions into ponds, etc. By massing trees and shrubs he will hinder the eye from taking in the flatness of the place; his best artistical deceptions will he contrive by planting judiciously. But where will he put those Evergreens? Probably on the highest ground and on the most abrupt spots.

A level place is of itself the most difficult to handle, as nature there gave the fewest points to the artist. A plain is the type of fertility, wealth and joy, consequently the landscape gardener will try to perfect that character. Flowers and flowering shrubs will enter largely his assortment whilst of evergreens he will be chary and not scatter them, but put them together on what elevations he can command.

Suppose however there is nothing of an elevation to be had or to be made, as might happen when the ground is formed in alluvial districts; ground which luxuriates just in the richest and lighest colored vegetation, what then?

He can still take recourse to the Hemlock Spruce. The effect of its pyramidal growth is much tempered by the graceful curve—I am tempted to call it *the weep*—of its branchlets and by its feathery foliage which with its motion answers to the faint breeze. The hemlock will do very well with water. Let our artist only have care not to bring it too close such deciduous trees as for instance willows. That softwooded tribe will look feeble and washy along side of the hemlock, and yet successfully extinguish their serious grace. Best select a turn in the creek and thus separate the neighborship of the kinds in the sight of the beholder.

Again, suppose we have not even the charm and the help of the water, but have merely a loose uniform piece of ground to deal with. Let us follow up, my reader, these suppositions, for it is not as fascinating to lay out grounds on paper as it is to build castles in the air?

Well, in such extreme case the landscape gardener will cast about and probably call in the aid of the architect. That intractable piece of ground may be raised somewhere at least one step, that step may be set off with hewn stone, a balustrade may be erected, finished off on both sides with a half high wall, crowned in its turn with vases, etc. Such structures will form a demarcating line and right behind them will be planted evergreens. However, it may so happen, that the sister art be too expensive and that nothing can be resorted to but planting. That will be as unfortunate a case as was once assigned to me. Lady gardener, though I am, and a student only of nature, I was once given plenary power to overcome such obstacles, and I will relate how I went about it.

Under my direction a thick clump of trees was planted so as to deflect the straight road into a considerable turn. This clump stood isolated in grass. At some distance from it I began planting with low shrubs—wild roses, etc.,—then larger ones—lilacs, hazel and so forth—then small trees—thorns, wild cherries, etc.,—then larger trees—mountain ash—beeches, etc.—then the largest kind of trees. My object was to get an elevation of outline against the horizon as a substitute for an elevation of the ground. Planting all the while with that studied negligence which when the trees were fairly grown, should efface the trace of any design. Interspersing also at the same time such trees as might prepare the eye for the transition into a read body of evergreens. Such trees are the Birch, the Cypress. the Larch. They blend the two kinds into one another. I similarly employed Junipers, Arborvitæs and Hemlocks on their part to meet the deciduous grove. Another and a gentler turn now led the wanderer amongst the sombre pines. Here he caught a glimpse across the graduated vegetation into the open fields and the world beyond, and felt removed from them.

But no mere wilderness of pines was there to be. Such our mind cannot bear long. A narrower compass fits us better, and we hail the hand of man in the wilds of nature. So the pinegrove opened and discovered a hollow wherein grew Rhododendron, Kalmias and Yews. Along a semi-circular road carried near its edge stood a select body of pines, wide enough apart to grow in perfection and close enough to form a green roof. When they had grown up, my husband improved the scene by placing in the hollow a beautiful female figure, "Silence," of white marble on a granite pedestal, with finger raised to her mouth she bade the wanderer

> "To use no more his mortal tongue
> Within the precincts of the Holiest,
> But yield to feelings such as would
> The spot and place inspire.
> Thus would he find the secrets,
> that he longed to know."

Did I succeed? I do not know. It will take another quarter of a century to show the desired effect fully. But success or no success, the idea holds good: to bring a change into your grounds by any means which do not run counter to good taste.

As a general thing now, it is less proper to remodel nature and to engraft new scenes on the landscape when you have to do with a large place, then it is with a smaller one. In fact the more circumscribed the ground, the more will the beholder tolerate a compression of nature, for a garden he will even claim it. The artificial will here enter gracefully and adorn, whilst there it would amount to a violation of virgin creation. We look on a garden as the work of man and deal with details in it; in a park we look for natural scenery, the work of God and don't like to trace in it too much of human interference.

A great many things may therefore be introduced with propriety into a garden, which would be inadmissible in a park—for instance the cutting up of the grounds, the multiplication of roads and paths, the architectural ornaments, etc., etc. Still,

when it comes to evergreens, this rule will not hold good. A level garden, in a low country, with no background for support, will not easily bear evergreens, and it is dangerous to dabble with them.

The leading idea of the foregoing may perhaps be thus stated: man must not run against the drift of nature without an object. Evergreens must not stand, where they cannot be expected in a natural way, without some (real or imaginary) object.

We have now contemplated the mountain and the valley. We need not deal with the happy medium, the undulating country. Here we get hills or mountains as background, and whenever we have such background at not too great a distance, then evergreens should come in for a good share. Happy he, whose lot is cast among the hills. There the lover of nature will find the greatest variety, the quickest changes and the best effects of nature. These will he study to his heart's delight under all sorts of skies, at the different hours of the day, and in the different seasons. If he cannot paint landscapes and reproduce on canvas for others, he will acquire the eye at least of a painter and reproduce on the inner retina of his mind for himself. To such country also will the landscape gardener resort, here he may study his art, and revel in its practice; with so many points, given, the task is easy.

A final article will enter into the details of evergreens.

A CROP OF GRAPES IN EIGHTEEN MONTHS--WITHOUT A PARALLEL.

BY MR. R. BUIST, PHILADELPHIA.

It was my privilege a few days ago to join a party to inspect a crop of grapes in the Grapery of General Pleasanton, that appeared to us without a precedent. The Grapery is 84 feet long and 27 wide, with a span roof, on the fixed roof principle, aired by ventilators at the top and over the door in each end, glazed in the usual way except every eighth row of glass is bright blue. The borders are elevated and thoroughly drained, composed of materials available on the premises, with a liberal supply of slaughter-house offal and charcoal, which had been incorporated a few months before, filling the border the whole inside and about twelve feet all round is so prepared. The principal vines are planted outside and taken in just under the glass, about three feet above the level of the floor. The vines were planted in March, 1861, and were one year old; cost 40 cents each, and were, to use the expression of the General, "like pipe stems," but had received no liquid manure when growing in the pots, nor lime. In September, 1861, I measured many of vines that had grown 40 feet long, and were three inches in circumference. The person that planted them had not, I believe, done any thing of the kind before, and the gardener that had them in charge was not aware that the laterals should have been stopped.

Since that time until the 15th inst., we had not seen the house. The vines appeared to have been cut back to canes of about eight feet long. Nearly every vine on both sides, both ends and also both rows in the centre of the house had broken well, and produced from seven to fifty bunches of handsome fruit, nearly all well colored, and would have been all well colored except for an excess of defoliation by an inexperienced operator. I was confident, and so was the majority, that many of the vines had over 40 pounds of fruit; and in the house there were certainly over 1,000 pounds, which at 50 cts. per pound, would pay for a grapery of equal size of this in 18 months after planting with vines only 30 months from the eye. We say this is without a parallel.

No boasting of great practical skill; no nostrum of mixture; no special pruning. On the manual part there is rather evidence of neglect, and we discovered that some animal had just gnawed off two vines at the collar. There is also evidence, as with us, that the late grape *Trebiana* cannot bear a very high temperature without blistering the fruit.

You will thus see that high professional skill has not produced the crop, for there has been three different head gardeners in that period. The question will therefore arise, "Is it the preparation of the elvated borders, or is it the blue glass that has produced such a crop?"

You could very readily place your eye upon a a Grapery, considered as first class in every thing, that has not produced half the results; and I can place my eye upon one planted at the same time, with vines at three times the cost, and every other part without stint or measure, that has not, in proportion, produced one-fifth of the result. Methinks I hear some of your readers exclaim, "but the vines are ruined." I do not think so; and, if no accident occurs, next season will equal it.

We leave the balance of the subject to Philosophers on Grape-growing with the aid of blue glass, and good dry elevated rich borders.

Rosedale, August, 1862.

The Gardener's Monthly.

PHILADELPHIA, SEPTEMBER, 1862.

☞ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box 406 Philadelphia."

☞ Persons sending two new Subscribers for 1862 in addition to their own, with $3.00, can receive a copy of our First Volume, (1859) free. All persons who have paid their subscriptions for 1862, by sending two new Subscribers and $2.00, can receive a copy of the same.

PROPOSED IMPROVEMENT OF OUR MAGAZINE.

THE approaching meeting of the National Pomological Society reminds us that we are entering upon our fourth year's existence. It was a good idea of the publisher to bring out the first number simultaneously with the Pomological meeting in New York. Each recurring festival reminds us of the happy era of our birth. We say happy, for we consider ourselves peculiarly fortunate in having secured for our journal such hosts of friends that even a national struggle, so gigantic that Lord Palmerston says history affords no parallel to it, has not endangered its existence.

The position of the *Monthly* at the present time is indeed safer than we ourselves thought possible. No disease has a more blighting effect on vegetation than war has on Horticulture; and when the Flag of the Union was attacked at Sumter it was a serious question with us, whether it would not be better to break the thread of our publication,—to resume it with more peaceable times; but we persevered onwards, and the next January found us with a greater number of *paid up* subscribers for 1862 than any corresponding January of former years.

Satisfactory, however, as the *Monthly* appears to be to most of our subscribers, and determined as they are to sustain it, the Editor feels it is not what he wishes it to be. All the talent is employed on it that can be afforded, but were the means at hand to command other advantages, the interest of its pages he is fully convinced would be considerably increased.

It was one of the inducements to publish our journal at One Dollar per year, instead of the customary two dollars, that we should, to a certain extent, have a claim on our subscribers to extend our circulation among their friends and acquaintances. At one dollar per year we cannot employ agents to canvass for subscribers; we cannot engage men to collect outstanding dollars for subscriptions; nor can we scatter expensive advertisements of our journal all over the country to increase our subscription list. The difference between the one and two dollars we endeavor to expend on the journal, and trust to be remunerated for the expense by our subscribers each feeling an individual interest in our prosperity and welfare.

And we would now remind our friends that this is the season of Fairs and Horticultural reunions,—the time of year when results are compared with the experience of others, and when one who believes the *Gardener's Monthly* worthy of his regard, may, with as much profit to us as at any season, introduce the magazine to the notice of his neighbors and friends.

Not only in the hope that by extending the circulation of the *Monthly*, and enabling us to increase the attractions and value of the magazine, is it directly to the interests of our subscribers to act as agents for our work,—all classes of horticulturists benefit themselves indirectly in the same way.

The real gardener, who by dint of hard study and observation, understands his business in all its branches, and who suffers more from ignorant pretenders than any other class, is interested in spreading real information before the people; as it is only when the employer is able to distinguish between real knowledge and such pretension, that the man of real merit has much better chance over the one who has nothing but his "face" to recommend him. For the same reason employers are interested. The more they know, the less chance they run of making a bad selection.

Again, gardeners are interested in their employers understanding something of the art of gardening. Few men can take any interest in what they do not understand. To become acquainted with the wants, trials and difficulties which a gardener has to overcome, is one of the surest means of enlisting the sympathy and assistance of the employer in removing them. In Europe the best places are old family establishments, where they are kept up as part of the pride of the family name. In America, where the the poor man of to-day is the rich man of to-morrow, the best places are those in which the proprietor takes a special and particular pleasure in the art of gardening for its own sake.

So also have nurserymen a particular interest in the extensive circulation of our journal. They suffer severely from the ignorance of customers. Moreover the more the public understand and love trees,

plants and flowers, the better it is for them and their trade.

And it is the interest of the whole public that true taste in all that relates to rural affairs should extensively prevail. A man has a right to do what he likes with his own. In one sense, what he does is no ones business. Yet when he builds, or makes a garden, or even plants a tree, the house—the place—the planting—all become part of the country on which other eyes beside his own will rest; and to these eyes it is a matter of some importance whether what their neighbors do is pleasing, or disgusting by its unchasteness or deformity.

Gardener's and their employers, amateurs, nurserymen,—the whole Horticultural public, being thus all more or less interested in the extension of our journal, we may safely leave the matter in their hands. We are well satisfied with what they have done for us in the past, and glory in our subscription-list and our magazine as it is; but our pride is in progress, and we want to see our journal not only continue "a very good thing," but to increase in value with age. Every additional name sent to the publisher, with each present one, next year, will help us to do this; and all we can do to improve our journal for our reader's benefit will be the response.

RIPENING OF FRUITS.

A SHORT article on the Tomato, by Y., in our present number, is worthy of more than passing attention. The writer found that tomatoes, suffered to lie in their natural position on the ground, ripened earlier than those trained to any form of trellis. This exactly accords with our own observations. And it is in perfect unison with all that we have taught since the organization of the *Gardener's Monthly*; not, indeed in regard to Tomato culture, but in connection with the general theory of ripening fruit. Yet, there is not a more widely spread error, than the common belief that fruits must have "all the sun and air possible to ripen them early and properly."

Thus we see everywhere around us numbers of excellent practitioners stripping their vines of foliage to "let in sun and air to ripen the fruit," and if there is one spot on the ground more sunny and exposed "to the air" than another, that spot they are sure to select for some apricot or choice fruit that they particularly value.

It seems to be forgotten that fruit ripening is in the main a vital process. Chemical action is of course essential to it; but it is dependent on vegetable life. This vitality is maintained by well-developed and healthy foliage, and this again is dependent on the general health of the plant.

All pruning is more or less detrimental to the general health of the tree. Winter pruning or summer pruning, the effect is the same. Pruning is but a compromise.

To gain a great object, we sacrifice small advantages. In pruning, that sacrifice is drawn from general health. We break off a strong shoot while green or succulent, that it may not rob a weaker one below; or, we shorten a weak shoot in winter that it may push stronger next season. Here we gain desired advantages, but the vital force receives a shock. The more severely we pursue this course the more we perceive the shock, till, as is well-known, we can take off leaves or shoots enough to utterly destroy the life of a tree. We prune trees at transplanting, just as we would cut off a man's leg; not because the tree likes pruning, or that amputation is a peculiarly pleasing operation, but as a part of that system of compensation which nature demands for broken limbs and broken laws. We gain an advantage, but with permanet loss.

Men like to deal with aphorisms. It is easier to follow a rule than to understand the reasoning; so if we tell a child to "take care of the pence and the pounds will take care of themselves," it will be more likely to be economical than if we read it a long homily as to the reasons therefor. So we shall perhaps, be more generally understood if we reduce all we have said to this, "take care of the leaves and the fruits will take care of themselves."

If we go into a dense wood, where the grape-vine never knew the gardener's knife, and see the vine in its massiness of foliage, rambling over bushes and trees, in dells or ravines, and where the sun's direct light never shines, our "sun and light" friends will expect to see green and unripe grapes; yet no enraptured poet ever dwelt with more pleasure on the "dark black orbs" of his fair angel, than the genuine lover of good fruit may dwell on the dark black orbs hanging in the wildest luxuriance from these extremely healthy, but sun forsaken vines.

If we look into similar places,—not, perhaps, quite so shady, for that is not its nature,—and there note the fine healthy leaves of the Blackberry, with its fruit black as jet beneath the still shadier foliage, and the bright shining little pearls glistening from every pip; do they not ask you bluntly, what is sunlight to them? And if you are not prepared to answer, go to the garden of some "sun and air folks," look at the hot board fence, facing due south, and tarred to make it hotter; and against it, with large yellow leaves and red ripe berries, see the

poor Lawtons languishing for their native shade. Their owner considers Lawton a great humbug; and the Blackberry no better than his own fence rows afford. Friend Lawton, forgive that man,—while thousands bless you, this unfortunate knows not what he does!

When your Gooseberry leaves fall off by mildew, the grape leaves by hail, or the pear leaves by blight; do you have gooseberries, grapes or pears? We need scarcely answer; and yet the same persons, who know they do not get good fruit under these misfortunes, by their very systems of pruning, which "lets in the sun and air," are really working to the same unsatisfactory end.

"Take care of the leaves, and the fruits will take care of themselves." Mr. Buist cleverly showed this, in an article he contributed to an early volume of the *Gardener's Monthly*. He set a novice to shorten in some shoots in his vinery, and before he saw him again, had a few vines nearly stripped of their foliage. These vines had badly colored grapes. They never had before, nor had the rest of the grapes from the point where the defoliating operation ceased.

"Take care of the leaves, and the fruits will take care of themselves." Long before Mr. Buist's article ever saw our pages, a few acute gardener's were well aware of the importance of the maxim. If they wanted grapes to color "very particularly" well, they shaded the vinery a week before the fruit ripened; "for," said they, "too strong a sunlight has a tendency to ripen leaves, and as soon as they ripen they are no longer of any service to the fruit. The longer we keep our leaves healthy, the darker and better the fruit."

We have preached on this text before and often. Like little drops of water, our labors have not yet wore much of a hole in the stone of prejudice, as we see but too well in so many vineries, fruit-houses, gardens and orchards around us; but we have faith in water wearing its way in time through the hardest rock, and while welcoming such experiences as this of our "Tomato culture" correspondent, continue to teach as heretofore, "Take care of the leaves, and the fruits will take care of themselves."

BROOKLYN HORTICULTURAL SOCIETY.

In the proper column will be found the advertisement of the Brooklyn Horticultural Society. The great success which attended the spring exhibition has been good encouragement to try again,—and we trust that friends through the country will contribute to its attractions, by sending items of interest to the exhibition, and by giving their personal attendance where practicable.

THE NATIONAL POMOLOGICAL SOCIETY.

Before we again go to press, the Biennial meeting of the society will have been held at Boston, and we sincerely trust that every effort will be made by the friends of Pomology throughout the States to render it in every way a success.

Though members from the Southern States, who would have been as heretofore heartily and sincerely welcomed for their knowledge aud devotion to the cause, will not on this occasion be present,—the increased impetus given to fruit-growing by the former labors of the society has raised up so many new workers in the field, that in spite of the troubled times, we anticipate a large attendance, and as much interest in the proceedings as have heretofore marked the meetings of the congress.

Its past success will bring with it new duties. Before its existence progress was slow. Any thing was good enough, and its labors were chiefly directed to showing what to plant. Since it started, every one has gone to raising new fruits, till now it may as well address itself to the task of teaching us what *not* to plant. Though a more difficult and delicate duty, it is one of which the society may be proud,—proud that its influence has caused so many good things to appear, as to create even the necessity for this fastidious selection.

Scraps and Queries.

☞Communications for this department must reach the Editor on or before the 10th of the month.

☞The Editor cannot answer letters for this department privately.

New Fruits.—We do not know whether the kinds named are for sale or not. We suppose not, or they would be advertised. We carefully exclude any thing from our reading columns that is simply an advertisement. The publisher has a department exclusively for that. It is not fair towards those who pay for advertising, that others should get advertising free. Moreover it is a nuisance to an amateur who has not a plant to sell, to find himself "advertised." We have no right to do it.

Best Strawberry to Plant.—*Lycoming* asks: "I see by the report of the Pennsylvania Horticultural Society, the Trollope's Victoria was considered best of all. Does this mean that the society recommends it for general cultivation? What would you advise me to plant?"

The Horticultural Society does not "recommend

the Victoria for general cultivation." It is too poor a bearer in most soils,—that is its only and great fault. Judges only judge of what is before them for judgment,—of these size, quality and general appearance are the most prominent. Hardiness, prolificness, capacity to stand sun, and many other peculiarities, they cannot be the judges of at that time. The only way to form a character as you suppose, would be for judges to examine plants when growing. Reports of exhibitions only *aid* in forming a judgment, and are well enough so far as that goes.

It is difficult to recommend any one variety that will suit every locality. In Boston, for instance, Hovey's Seedling, according to Mr. Barry, is generally reliable. Here it is so uncertain as to be generally worthless. So here Triomphe de Gand was tried years ago and found worthless, but at Pittsburg it is found admirable. But here it was grown in beds,—at Pittsburgh it is raised in hills. Those who discarded it here under the first plan, on trial last year with the latter, find it better than formerly.

In short, climate, locality, soil, modes or conditions of treatment, and so on, have so great an influence on determing the value of a strawberry, that no man can safely be trusted to recommend for another locality. We advise you not to confine your new plantation to one kind, if you have as yet no experience. Try three or four, and those kinds that seem to do well generally everywhere, in spite of local influences. Of these we would name Wilson's Albany, Triomphe de Gand, Scarlet Magnate and Vicomtesse Hericart de Thury, as well-known and well-tried kinds. There are others better for you no doubt, but they have not been so *generally* tried and found superior, as to warrant so *general* a recommendation. Try these sparingly, and as you learn the result on your own grounds, extend.

Thinning the Leaves of Grape-vines.—Since sending the chapter to press on this subject, in another column, we have received the following inquiry. To what we have already written, we may here add, that young and vigorous four year old vines will not show the ill effects of defoliation immediately as older vines. The process of ripening depends on healthy leaves more than on sunlight. Every leaf taken off, not only does not assist ripening, but sooner or later, the ill effect will show itself in the vine :

261 37th Street, New York, Aug. 15th, 1862.

Editor of Gardener's Monthly :

My neighbors, right and left of me, are in the habit of periodically taking off part of the leaves of their grape-vines. They say it ripens the fruit sooner, and they have done it successfully for the last two years.

As I have my doubts about it, I approach the higher tribunal, and request you to decide. In doing so, please state your reasons why you approve or disapprove of the practice.

With best thanks, Yours truly, H. E. W.

P. S.—The vines are in the yard facing south, and about 4 year's old

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Kohl's Abington Blush Strawberry—*W. R. Prince, Flushing, N. Y.*—"You described a strawberry as *Abington Blush*. Mr. G. M. Kohl, *the grower*, tells me it is a *crimson berry* with *white flesh*. This very greatly alters the matter, and I wish you would give us the true version. It appears not to be a *white* variety at all, nor a blush, but veritable crimson. It is said to be a seedling of the Wilson, impregnated with the Lennig's White. I wish to obtain *the proof* of this sexual union, and *no guesses* about it, if we can get precise information regarding it."

[We never saw or heard of Mr. Kohl or his strawberry until we saw the fruit at the Pennsylvania Horticultural Society, where its *beauty*, combined with its good quality, attracted our attention. It was a greenish white berry, with a deep scarlet red blush on its cheek. We take the idea of its being a "hybrid" as a mere "guess," as we understood the raiser to say he "found it first in fruit amongst his Lennig's White."]

Pears—From *R., E., York, Pa.*, sent for name. They have been growing for some years in the vicinity, called locally Lichty Pear. They are different to any thing we know ripening at this season, and it is probably a kind that has originated in and not been imported to the vicinity. It is an excellent variety, and well worth propagating.

J. S., Baltimore, Md.—1 Rostiezer. 2 Not ripe and not distinguishable in its present shape. 3 Sheldon. 4 Bloodgood. 5 Don't know, and not worth knowing. 6 Zoar Beauty. 7 Madeline. 8 Urbaniste. 9 Not ripe, probably Andrews.

From *Cumberland, Md.*—Form intermediate between Doyenne d'Ete and Beurre Giffard, resembling both also in general appearance when received; after keeping for a few days becoming a deep golden yellow. It is probable they were gathered too soon, as in every stage that we tasted them they were dry and insipid, and we are sure would not

have been thought worth sending us if never of any better quality. They are early, but we had Doyenne d'Ete also ripe to compare with them.

NAMES OF PLANTS—*W. A. P., New Brunswick, N. J.*—Clematis flammula.

J. A. N., Mercer, Pa.—Hypericum prolificum, As you observe, none the less worthy of cultivation because wild in your district. It is, in fact, in most nurseries for sale.

F. H,, Marblehead, Mass.—Astrantia major.

PRESERVING CRYPTOGAMIA—*W. C., Ottawa, Ill.*—"Have the goodness to inform me through the *Monthly* how to preserve Cryptogamia, viz.: fungi or mushrooms?"

[Supposing our correspondent is preserving them for cabinet purposes, the usual plan is keeping them in alcohol. A better plan however is to get clean sand, perfectly dry, and place in around and over the specimen in a vessel,—flower-pot, for instance, and set in the full sun. This will dry out the moisture, while still preserving the form.]

VEGETABLES FOR THE ARMY.—A correspondent calls attention to the fact, that on an emergency carrots, turnips, cabbage, onions, and other vegetables, will sustain life in a raw state, and that many even prefer them in that way. There is no question but that thousands in the army would rather have them uncooked than not at all. He proposes that turnips should be sown extensively for this purpose. They are, as he says, as easily transported as potatoes, and if sown any time before the middle of September, will yield a handsome crop yet this season.

SOMETHING WORTH KNOWING.—Mr. Editor: In "Bright on Grape Culture," page 109, I read: "We have known seventy bunches of grapes to be produced on *five feet of cane.*" Will Mr. Bright please explain *how* this was done. G. WEEDER.

New York, Aug. 13th, 1862.

DISEASED ARBORVITÆ—*W. W. W., Oberlin, O.*—There is nothing the matter but that the plant is covered with the brown scale insect, which a syringing with soapsuds, heated to 135° will instantly destroy.

TO CORRESPONDENTS.—Several excellent articles are again held over. We take opportunity to express our sincere thanks to our contributors for the handsome manner in which they are aiding us with their pen in these exciting times. One might suppose other matters would occupy their thoughts, to the exclusion of all taste for our peaceful pursuits; but our pages contradict this impression, some of our friends even considering our past three or four numbers interesting beyond any heretofore published. When the Potato disease first appeared we heard a farmer say, "the blight may come every year for what I care; I lost half my crop, but I got four prices of last year for the balance." We are afraid to admit with our friends that our few past issues are any better than former ones, lest peradventure we may be found like the farmer indifferent to the speedy eradication of our national blight,—which we can't "believe in," however strongly "convinced" by the success of our labors on the *Monthly*. Yet we do hope our friends will continue as they are doing, their best efforts to make our paper practically useful.

Books, Catalogues, &c.

SILLIMAN'S AMERICAN JOURNAL OF SCIENCE AND ART, for July, is on our table. Among the usual strictly scientific matters discussed, are several that will interest the most general reader, particularly an article on the "Physiology of Sea Sickness," by Richard Meade Bache, of the U. S. Coast Survey, which is conceded to be one of the most philosophical treatises on the subject that has yet appeared.

The "Sketch of the Mandan Indians, with some Observations illustrating the Grammatical Structure of their Language," is another of these generally interesting papers.

Dr. Newberry contributes a paper on some new fossil fishes.

Dr. J. Wyman, "experiments on the formation of infusoria in boiled solutions of organic matter, enclosed in hermetically sealed vessels, and supplied with pure air."

These experiments appear to have been instituted with the view to set at rest the disputed topic whether there is or is not such a thing as "spontaneous generation" among the lower orders of plants and animals. Singularly enough, the results leave the question in more uncertainty than ever. The whole article is well worthy of perusal. We extract the closing paragraph:

"The result of the experiments here described is, that *the boiled solutions of organic matter made use of, exposed only to air which has passed through tubes heated to redness, or enclosed with air in her-*

metically sealed vessels and exposed to boiling water, became the seat of infusorial life.

The experiments which have been described throw but little light on the immediate source from which the organisms in question have been derived. Those who reject the doctrine of spontaneous generation in any of the forms in which it has been brought forward, will ascribe them to spores contained either in the air enclosed in the flask, or in the materials of the solution. In support of this view it may be asserted, that it has been proved by the microscopical investigations of Quatrefages, Robin, Pouchet, Pasteur and others, that the air contains various kinds of organic matter, consisting of minute fragments of dead animals and plants, also the spores of cryptogamous plants, and certain other forms, the appearance of which, as Quatrefages says, suggests that they are eggs* We have made some examinations of our own on this subject, but it would be unnecessary to give the results in detail. We will simply state, that we have carefully examined the dust deposited in attics, also that floating in the air, collected on plates of glass covered with glycerine, and have found in such dust, in addition to the debris of animal and vegetable tissues, which last were by far in the greatest abundance, the spores of Cryptogams, some closely resembling those of Confervoid plants, and with them but much less frequently, what appeared to be the eggs of some of the invertebrate animals, though we were unable to identify them with those of any particular species. We have also found grains of starch in both kinds of dust examined, to the presence of which Pouchet was the first to call attention. When compared with the whole quantity of dust examined, or even with the whole quantity of organic matter, both eggs and spores may be said to be of rare occurrence. We have not in any instance detected dried animalcules which were resuscitated by moisture, and when the dust has been macerated in water none have appeared until several days afterwards, until after a lapse of time, when they would ordinarily appear in any organic solution.

Those who advocate the theory of spontaneous generation, on the other hand, will doubtless find, in the experiments here recorded, evidence in support of their views. While they admit that spores and minute eggs are desseminated through the air, they assert that no spores or eggs of any kind have been actually proved by experiment to resist the prolonged action of boiling water. As regards Vibrios, Bacteriums, Spirillums, etc., it has not yet been shown that they have spores; the existence of them is simply inferred from analogy. It is certain that Vibrios are killed by being immersed in water, the temperature of which does not exceed 200° F. We have also proved by several experiments that the spores of common mold are killed, both by being exposed to steam and by passing through the heated tube used in the experiments described in this article. If, on the one hand, it is urged that all organisms, in so far as the early history of them is known, are derived from ova, and therefore from analogy, we must ascribe a similar origin to these minute beings whose early history we do not know, it may be urged with equal force on the other hand, that all ova and spores, in so far as we know any thing about them, are destroyed by prolonged boiling: therefore, from analogy we are equally bound to infer that Vibrios, Bacteriums, &c., could not have been derived from ova, since these would all have been subjected. The argument from analogy is as strong in the one case as in the other,"

Dr. Gray's review of Darwin's new book on the contrivances by which orchideous plants are fertilized, will be very valuable to all who are interested in this curious tribe of plants, into which hybridization has already been carried with astonishing success.

Dr. Hooker's paper on the Cedrus deodara, Cedrus atlantica and Cedrus Libani, goes to show pretty conclusively that these three now considered species have been "progressed," "developed," or whatever term may be most approved of, from one original form, and tends to give force to the views Darwin and others entertain of the way in which species have been originated.

We regret our space will not admit of reference to other matters of interest which the present number contains. We can only hope that those who have the means, and are interested in the improvement of Horticulture by applying to it all the latest discoveries in the allied sciences, will become regular readers of the work itself.

Biographical Notice of John Evans. By Dr. Geo. Smith of the Delaware County Institute.

Several notices of this distinguished Botanist and his collections have recently appeared in our pages. The present sketch is a tribute to his worth that must be gratifying to all who knew the extent of his services in life to science and his fellow mortals.

* See an abstract of Pasteur's researches on Spontaneous Generation, this Jour., xxxii, 1, 1861.

CATALOGUES.

The fall catalogues of the nurserymen are making their appearance; the following are already before us:

Francis Brill, Newark, N. J. Wholesale list.

W. Reid, Elizabethtown, N. J. Wholesale list.

J. W. Manning, Reading, Mass. Fruits and ornamentals; both trees and flowers.

Prince & Co., Flushing, N. Y. Strawberries.

Thos. Morgan, (successor to J. W. Faulkner,) Stamford, Conn. Trees, plants, &c.

F. K. Phœnix, Bloomington, Ill. Wholesale list.

N. N. & M. D. Willson, West Bloomfield, N.Y. Wholesale list.

Edward Tatnall, Sr., Wilmington, Del. General Catalogue.

Southwick & Sons, Dansville, N. Y. Wholesale list and General Catalogue.

Wm. Corse & Son, Baltimore, Md. General Catalogue.

C. B. Miller, 634 Broadway, N. Y. Foreign and American Horticultural Agent, &c.

In connection with his business, Mr. M. has added the novel feature of an exhibition and sales-room. Products of interest from any part of the country can thus be prominently brought before the public and any superiority they may possess become universally known. They who have really good articles to bring into notice, need not now keep their light under a bushel. We trust Mr. Miller will be well supported in his enterprise.

New or Rare Plants.

Spooner & Parkman's New Japan Lily.—In a former number we have published some notes of new Japan plants, successfully introduced by F. Gordon Dexter, Esq., of Boston, and successfully carried through their earlier stages of growth by Mr. Francis Lee, and subsequently by our friends Spooner & Parkman. Among these the Lily has flowered, and proves to be entirely new, and as beautiful as it is novel.

We give below a sketch of it, very much reduced in size, which however well exhibits the peculiar revolute points of the petals, of which Mr. P. speaks in the notes he was so kind as to furnish with. (See August number, page 237.)

LILIUM AURATUM. (From a flower exhibited by Spooner & Parkman, at the Mass. Hort. Society, July 12, 1862. *Phot. by Whipple.*)

A few weeks after receiving Mr. P.'s note, we received the London *Gardener's Chronicle*, and was struck with the singular coincidence, that on the very day Mr. P's specimens, according to his letter were in bloom with him, evidently the same lily was exhibited by Mr. Veitch at London, on the same day.

We are often said to be "behind" in importing new things; but in this case America and England must divide the honors.

Dr. Lindley considers it the *Lilium auratum*, Whether a previously known plant to botanists, and just introduced to our gardens, or an entirely newly named species, we do not know just know; but this is of no importance to cultivators.

All the Lilies of Japan are perfectly hardy, and are among the most beautiful and interesting plants that any one can grow. So far as our experience goes, in the Middle States, where they are grown out in the open air, they prefer a strong loamy soil and a situation, rather to one that is dry and sandy.

The following from a Boston Daily paper, is well worth transferring to our columns, as showing how this new wonder was received by the general public of that city:

New and Rare Japan Lily.—On Saturday last, there was exhibited at the weekly show of the Mass. Horticultural Society, a rare and very beautiful Lily, recently brought from Japan. It is well known that we are indebted to that country for the vory beautiful and showy plants commonly known as "Japan Lilies," and which, during the months of August and September, are favorites in every garden.

The plant now under notice, though a lily from Japan, is by no means a "Japan Lily" in the common application of the term. The Japan Lilies are botanically known as "Lilium lancifolium and speciosum;" the many fine seedling varieties being distinguished by the adjectives signifying the colors, or by the fancy names given by their originators. The present plant is evidently not a variety of L. lancifolium, but seems to be a *new species*; we are at a loss what to call it, for as far as our researches have led us, it is *undescribed*. Whether it is a hybrid between any of the common Japan Lilies and Lilium longiflorum, (which in some respects it resembles,) is a question we cannot at present discuss, but the probabilities seem against its being a hybrid or variety.

There were two flowers exhibited—the bud of the larger five days before expansion measured 6¾ inches, the corolla is 8 inches in diameter, and the petals straightened out *exceed a foot*. The color is white, with a band of yellow down the centre of each petal, the outsides of the petal darker, and the insides covered with protuberances, as in the common Japan Lily; the flower is powerfully fragrant, and continues in perfection about a week. The flowers exhibited bloomed in the open air, though started under glass. The history of the plants may not prove uninteresting.

They were brought from Japan in 1861, by F. Gordon Dexter, Esq.; were given by him to Francis Lee, Esq., and by him to Messrs. Spooner and Parkman, of Jamaica Plain, by whom they were successfully bloomed and exhibited. This seems the greatest acquisition the Lily tribe has received for many years; and should it prove hardy, as there is good reason to hope, it will prove a worthy companion for our well-known and always admired "Japan Lilies." We understand that the Lilies exhibited received the award of a Silver Medal from the Flower Committee of the Society.

New and Rare Fruits.

Brackett's Seedling Grape, No. 1.—The following statement is from the Report of the Massachusetts Horticultural Society:

"Of hardy varieties, for out-door culture, the Committee have had an opportunity of tasting of a new seedling of Mr. E. A. Brackett. It was a large round black grape, heavy bloom, large bunches, thin skin, little or no pulp, juicy, sweet and very vinous. Mr. Brackett stated that it was ripe on 10th September. This has never been publicly exhibited; a few berries of it were shown by Mr. Brackett to some of his friends in 1858, the first year of its bearing, about the middle of September, who were then very favorably impressed with it. This year, when it bore many bunches, Mr. Brackett presented a bunch to the Committee; those of them who tasted of it formed the highest opinion of its value, and it seemed to them the best and by far the most promising new hardy grape that had been brought to their notice."

New Currant—*Dana's White.* Specimens from J. W. Foster.—This is certainly an acquisition. The berries are as large as the Cherry, and the bunch as long as the Versaillaise, but with the beautiful amber of the White Grape. The quality appears about the same as White Grape, but fermentation having commenced, from bruises on the way, we cannot speak positively on this point.

Fuller's Seedling Strawberries.—The Committee appointed to examine Mr. Fuller's Seedling Strawberries, submit the following report:

The Committee have heretofore spoken so fully of the value of Mr. Fuller's labors in the production of seedling strawberries, that they deem anything further on that part of the subject uncalled for. They have several times visited Mr. Fuller's beds, and given them a thorough and careful examination. They are now, therefore, prepared to present the results of their matured opinions.—There are three seedlings among those examined during the past two years which possess decided claims to consideration; the others the Committee have thrown aside, and among these last they are sorry to include No. 20, a large and productive variety of handsome color, but deficient in flavor.—The Committee will here state, that in arriving at their decisions, they were governed by size, quality, productiveness, earliness, color, firmness, and general vigor of plant, and they have selected those possessing these points in the greatest degree. The three varieties selected are numbered 42, 7 and 53, the preference being in the order in which they are named. There is but little difference to the general observer between 42 and 7, yet, pomologically, they are distinct. The preference has been given to 42 over 7 because it is a little firmer and more juicy. They are both valuable kinds. No. 53 is placed last, simply because it is much later; in other respects it is the best of the three. If it had been a little earlier it would have headed the list. Even as it is, it is a very valuable kind, and will take its place among the best.

The following is a description of the three best, which may hereafter be useful to identify them;

No. 42.—Berry very large, obtuse conical; color scarlet; flesh white, firm, and moderately juicy; seeds dark brown, prominent; calyx large and only moderately persistent; foliage large, coarsely serrated; flower-stock stout; flavor very good; quality, best. Very productive and early. *Staminate.*

No. 7.—Berry very large, irregularly conical; color crimson scarlet; flesh light red, moderately firm, not very juicy; seed dark brown, imbedded; calyx large and not persistent, foliage large and coarsely serrated; flower-stock stout; flavor good; quality very good. Very productive and early.—*Pistillate.*

No. 53.—Berry very large, conical; color, bright scarlet; flesh white, firm, and juicy; seed brown, prominent; calyx large, persistent; foliage medium, dark green, coarsely serrated; flowering-stock stout, flavor very good, quality, best. Very productive, but late. *Staminate.*

[The Committee use the term staminate here in the sense of Hermaphrodite, the explanation may save misunderstandings.—Ed.]

In conclusion, the committee would commend Mr. Fuller's Seedlings, as here selected, as entitled to some substantial award at the hands of the American Institute. They will take their place among the most valuable kinds that have thus far been introduced.

All of which is respectfully submitted.

Peter B. Mead, Chairman.
Wm. S. Carpenter,
L. A. Roberts,
C. M. Saxton,
} Committee.

Mr. Fuller objected to the conclusion of the Committee upon No. 7, because it is a pistillate, and, although it is a good berry, he will not send it out, because he thinks it an imposition upon the public to sell plants that will not produce fruit unless fructified by some other sort, which soon overrun and spoil the bed. This is the trouble with Hovey's and McAvoy's Seedlings, which are excellent fruit, and that is the trouble with all pistillates, and it is wrong to sell them when we have so many bi-sexual sorts of such excellent quality.

Domestic Intelligence.

A Landscape Gardener in the War.—Gen. Egbert L. Viele, who has recently been appointed Military Governor of Norfolk, is a brother of Col. H. K. Viele, of Buffalo, and was a classmate of Burnside at West Point in the graduates of 1847. He served in the 2d infantry until 1853, when he resigned to follow the more lucrative calling of a civil engineer and architect in New York. He was the chief engineer and designer of the the great Central Park, and was chosen by the city of Brooklyn to superintend the construction of their park.

How to Raise Seedlings.—When the berries from which we wish to grow seedlings are ripe, they should be marked and mixed with dry sand, so thoroughly that no two seeds shall remain together, putting sufficient sand to absorb all the moisture. Then sow the sand containing the seeds in a bed previously prepared in some half shady place, or under glass, sift on some fine mold, covering the seeds about an eighth of an inch deep. If the soil is kept moist, the plants will begin to appear in about four weeks, and will continue to come up until cold

weather; at which time they should be covered lightly with straw, say one inch deep. The plants should be set the following spring, 18 inches apart, in rows, at least two feet apart.

Stop all runners every week throughout the season, and keep the beds clean. The second year after transplanting, you will have fruit. Mark sexes of each as they come into blossom. As the fruit ripens, mark the time and character, and select the very best and destroy all other plants.—Lift carefully those that are to be preserved and put them into new beds where they will have more room to make runners. The correct estimate of the value of any new variety cannot be ascertained until it has fruited two or three years. For my own part, I shall never save a pistillate, although I have done so heretofore extensively, for the purpose of ascertaining by actual experiment whether they were any more likely to be better, or more productive than the bisexual varieties.

The results of some of the largest experiments which I have tried are, that out of several hundred seedlings of 1856 none were good, although sown from the best seed that I could obtain. In 1859 I raised another large quanity. Being more careful in selecting the varieties and in their fertilization, the result was a thousand different varieties. There were sixty pistillates, one staminate, which produced no fruit, and the remainder bisexual or hermaphrodite.

Out of this number I have three varieties that have fruited three years, that I think worthy of being cultivated. From two hundred seedlings of 1860, fruited two years, I shall keep two for further trial.

To those who may think this a tedious undertaking, I would say that no one should undertake to produce new and improved varieties of fruits and flowers if it is to be looked upon as labor. It should be made a pleasant pastime. A. S. Fuller.

Show of Grapes and Wines.—The Grape Growers' Association of Cleveland have passed a resolution to have a grand show of grapes and wines at that city early in October. "All the world are invited to bring or send-samples."

Parsons & Co.'s new conservatory in the Central Park, of which as proposed we noticed some months ago in the monthly, is now in progress.—The ground, a lot near 74th street and 5th avenue, being now graded and put in preparation for it. It will very much resemble the Palm House in Kew Gardens, and like that beautiful structure, will have a pond and fountain in front of it.

Currant Wine.—A regular currant wine manufactory has been in operation the present season in Lafayette, Indiana, and has turned out several thousand gallons of the beverage, which is said to be c first-rate article.

The Asparagus Beetle.—We see that asparagus, which has so long been free from any depredating insects, has at last been attacked by a beettle, *Crioceris Asparagi*, in the gardens about New York and Philadelphia, doing considerable injury to the crop.—*Rural New York.*

Foreign Correspondence.

FROM OUR OCCASIONAL CORRESPOND'NT.

Paris, June 19th, 1862.

* * * * For inasmuch the substance of our body and the tone of our mind is constantly getting made up by what we eat, and inasmuch as we eat a good deal of the vegetable kingdom; and finally, considering that you expound in your *Gardener's Monthly* the laws of that kingdom, I should think a little philosophy about what we eat would not be out of place in your *Monthly*.

I can't leave off being surprised at the quantity of salad the French do eat. I am here two years now and my eyes won't get accustomed to it. I have myself taken very kindly to salad and like it, to use a mild expression, prodigiously; but I shall never come up to the French. Goats revelling in the garden, is a picture recurring to my mind, when I see the beardy Frenchman stowing away his salad. But, here comes the point, the Frenchman is right. Aside from taste, he is right. Nothing better for health than salad,—green salad, to be sure I mean; not your lobster or chicken messes. And that, too, in spring, when all the humors in the body begin to work, like so much sap; when perchance, like all other animals, besides the daily renovation of epidermis,—excuse, I beg, the learned word,—we change coats completely, and get a new *spring suit*. That process not happily performed,—please don't suspect me of having gone into the patent medicine line,—diseases will ensue.

My mother,—she is dead long ago, else she would not allow me to introduce her to such a large and discriminating public as is the honorable body of your subscribers,—my mother used to give me every spring as long as I was in the pupa state, a dose

of brimstone and treacle. When I got a man and a butterfly, I flew away from my mother, and looked with abhorrence on brimstone and treacle. Strikes me now my cross temper and my little ailings every spring season, came from the absence of that arcanum. Anyhow, I should have taken that or something else. Combine with this the ever gay mood of the French, and the happy atmosphere round his brains; combine that brimstoneous treacle with treacleous brimstone, with the French temper, with the laws of my mother, with my present better state of mind and body; and contrast it then with the flesh-eating propensity of my countryman at home, and with their souls and bodies,—and you have caught my idea.

What, eat meat in equal quantities in each of the four seasons? Preposterous, I say. And how hard you are punished for it. Dyspepsia of mind and body! Turn now to fresh green salad; how it smiles at you!

There was one of your readers who, I recollect, grumbled at your not having enough about vegetables in your journal. When I subscribed, so I believe he said in his letter, I meant to invest my dollar in four equal parts: a quarter of the dollar's in Arboriculture; another of Horticulture; another of Botany, and lastly, the same amount of Vegetable culture. He did not get much, he meant, for that last quarter dollar. Well, friend Meehan, that man was right; he is an injured individual, and here goes my mite of reparation.

I will, for his and all those whom it may concern's benefit, enumerate here, the kind of salad our jovial Frenchman eats:

Lettuce, of course leads the list. Crisper and whiter than our American plants. Longer in season too, not only by reason of care and extra cultivation, but by the climate, that knows not the abrupt turn into the hot cycle, nor that fierce steady heat of America. No Frenchman, though, would eat his lettuce *per se*. Were you to offer it to him *pure* he would turn his nose up; or as that is rather impossible in either hemisphere, the nose being the stiffest of our limbs; he would turn up his upper lip, at the same time that he puts a fold in his brow. He would declare it insipid; his palate wants a flavor. That is given our lettuce in the common way of vinegar, oil, pepper and salt; and in the French way, in addition to these, by parsley, garlic, young onion and chervil.

Now, how many of your readers of the *Monthly* know the taste and the virtue of chervil? This stag-leaf—*cerf feiulle*, contracted to the English *chervil*—has a pungent, somewhat better, and most noble taste, and deserves a r row or two in your garden.

The learned ones among you will know the equally illustrious plant called Tarragon,—another corruption of the French Estragon, which is old French for the modern French Dragon,—which means a dragon or a dragoon. I have failed to find a likeness of either in its long leaf, and would not like it any better if I did. What I have found is a most interesting taste, of a new and novel kind, and somewhat like mint, but greatly superior to it. I bought a couple of sous' worth in the market, and for the sake of its odor hung it up in my study. I keep the window open all the time, till the room is delightfully scented, not a scent for ladies' noses, but for the nose of a stalwart man.

A half dead man, in fact, would get alive if he smelt this drying Estragon. When fully dry, your correspondent's best half will put it in vinegar, the vinegar will take the taste of it, possibly also some of its fragrance, and be a delightful relish like ketchup, or serve for pickling. This is the law of Estragon on the continent of Europe.

I will mention Endive salad; you have the plant though not in its perfection. Nor the Dandelion,—*dent de lion*, or, as every body calls it, the *pissenlit*,—which you have in perfection; but don't understand to make up into salad. He who likes bitter taste will welcome it.

I will mention all the more *bourrache*, a thing I could not master to eat. I have, in fact, given it up in disgust; but as a matter of taste, those who read this perchance will try it, and perchance will like it. I don't know if it is not called borage, and possibly cheap as weeds, and may have given its name to "porridge." (The Archæological Society is requested to pronounce on it.) A woolly, weedy leaf, of an uncommon taste—bitterish. I will with so much greater pleasure mention—

But no, on second and better thoughts, enough of salad for the day. If you like more, the advancing season will bring forth more and different kinds.

A word for your florists. High as were the prices for bouquets in the capitals of Europe, they were like nothing compared to the fabulous sums now spent for them. Not the rarity of the flowers alone, but the size of the bouquets is to be said. What think you of three monster bouquets, that filled the entire front of the stage of the Academie Imperiale de Musique, in the midst of which stood, bowing her thanks, Signorina Sticcolobacci, or something not unlike it, almost hidden by the monsters. White Camellias forming the initials of the lady's

name, every letter large enough to be visible at a mile's distance.

If we get by and bye a reaction, and measure our appreciation of charms and talents by the small size of the offerings, I shall not be astonished, for *les extremes se touchent*, said that man, a tithe of whose talents I cannot help wishing to be possessed by our generals at home. M.

NOTES UPON THE HORTICULTURE OF SCOTLAND IN THE YEAR 1861.

BY E.

NO. VII.

In concluding my notes with general remarks, I hope that no one will imagine that I wish to assert that every thing is better in Scotland than in our own country; on the contrary, I think that we are more highly favored than they. Their system, however is admirable. The head gardener knows he is there for life if he chooses; nothing but gross misdemeanor, which is very rare, will put him out of his place against his will, and he does not wish to move unless it be to a higher situation. When he thinks of leaving, he states his wishes to his employer, and he is generally the active agent in securing him the place. Consequently he feels secure and at home, and his desire to please is perfect. He is like the captain of a ship, he has no equal in command, and no superior but his employer; he feels himself master of his department, and any one who would insult or slander him would have to leave; his employer has no intimacy with his assistants, so they know they have no head but him, and they can only be promoted by him; when they leave (and they seldom stay more than two years) he is instrumental in getting them into other places. He was was once a journeyman, and knows what mildness and harshness mean; he makes himself familiar with his men, knowing that they may all be head gardeners sooner or later; he gains all his wishes by kind inducements,—which he could not do by domineering. Each man is head of a certain department, in which he tries to excel: one is foreman of the plant houses; another of the grape and peaches houses (vineries); another the pits of pineapples and early vegetables; then the orchard-houses, the the vegetable cropping, the training of fruit trees upon walls and trellisses, the herbaceous flowers, the shrubbery, etc., and each gets the assistance of the others when needed; thus the work goes on like clockwork, each performing his part like the wheels of a clock, all acting in harmony.

Their climate puts them far before us in green grass, and deciduous plants are earlier and later clothedwith foliage,and the trees are of better shapes. But we can lessen the distance between us and them one-half by doing as they do, namely, by deepening and enriching our soils before seeding down the lawns, and planting younger trees; and, where grass is kept short, give frequent top-dressings with manures in full equivalent to what has been taken off it, and by pasturing, as the tread of cattle and sheep make the soil solid, which is of much benefit both to grass and trees.

It was pointed out to me upon several places that the destruction to evergreen shrubbery by the cold of last winter, was less upon drained lands than undrained; rolling land, than flat undrained lands; in tree belted parks, than walled parks; near to lakes, rivers and creeks, than a distance from them; in groups than in singles; in bushes than in hedges. Those that suffered most were Araucaria imbricata, Cerasus lauro-cerasus and nobilis, Portugal Laurel, Magnolia grandiflora, Cedrus deodara, Cryptomeria japonica. Those that suffered less are, Laurestinus Arbutus unedo, Acuba japonica, Yew and Rhododendron ponticum. Those that did not suffer at all were, Tree Boxwood, Arborvitæ, Rhododendron maximum, hirsuta and ferruginea, Kalmia latifolia, glauca and longifolia. Andromeda polifolia major, etc., the dwarfs, must have been covered with snow during the extreme cold.

No kind of embellishment can surpass these evergreen shrubs, if judiciously arranged, in cemeteries, or grouped over a lawn immediately around a mansion. A greater extent of the park is seen, and groves around the out-skirts are better seen, and look more beautiful, in the distance. They look more gorgeous with trees scattered among them, but not so close as to hide them from any view.

We cannot grow all of those shrubs, but we could make shrubs of our evergreen trees, by pruning and clipping. The Hemlock and Arborvitæs can be kept dwarf in hedges; and surely they, and nearly all others, could be kept at ten or fifteen feet tall, and bushy. A greater number could be grown upon a given space, and would make it far more beautiful than all tall trees; if our avenues are belted with tall trees, that is just where we need shade,—but we want to see a long way over the lawn.

All the kitchen gardens are far from the houses, (that at Barrington is over a mile from the mansion), and are entirely hid from sight by trees and shrubbery. A stranger in going to the garden would think he was entering a grove.

The journeymen live in a house called *Bothy*, close

to the garden, and cook for themselves, each taking a week, and also to make the fires at nights for the glass structures. They have no intercourse with the house servants nor stable-men, nor any one else but the employer, so there are no disputes nor ranklings. A man for the purpose hauls away the manure from the stables once every seven days, (it is not allowed to lay longer). and puts it into a yard near to the garden, where it is made into heaps to ferment, so that all seeds of weeds and hay are destroyed before it is applied to the land.

To those who have not been in British gardens, we may tell them that they are enclosed with stone and brick walls, sixteen feet high, with flues running along them, which are heated with fire in spring to forward the fruit trees that are trained upon them. The gardens would not be such gardens without such enclosures; and ours would be like burning fiery furnaces in summer if so enclosed. Good thick hedges are the best enclosures for our gardens,—deciduous for vegetables, and evergreen for flowers. They keep up a succession of peas, cauliflowers, and many other vegetables, all the growing season that we cannot; but we can grow many kinds in the open garden that they must grow in hot-beds and pits. And so it is with flowers. They can keep Gillyflowers, Clarkias, Collinsias, Calceolarias, Nemophilas, etc., in bloom all summer, by cutting off the blooms as they fade; we cannot do that, but we can grow Verbenas, Petunias, Portulaccas, Eschcholtzias, Ipomeas, Maurandias, etc., better than they. They cannot grow Balsams, Manettia, Globe Amaranthus, etc., to any perfection in the open ground; but with Dahlias nothing can equal them. They cannot grow everblooming Roses like us. They have large beds of Carnations and Picotee Pinks. We cannot match them with China Asters in the open ground; but we far surpass them in Chrysanthemums. Their Dwarf Ranunculus we cannot grow, and spring-flowering bulbs, where we grow dozens they grow hundreds and thousands, yet what we grow are as good as theirs. Taking all things into consideration, where we prepare the ground as they do, and give our crops the same care, we excel them. Their flowers continue longer in bloom than ours; but let us cut off all blooms as they fade, and prevent the plants from going to seed, we can keep four-fifths of our flowers in bloom from early spring until frost cuts them off in fall. Let there be an end to the seed saving system in private places, and both our kitchen gardens and flower-beds will give four-fold the pleasure they now do; this spending dollars to save dimes is, to say the least, imprudent.

The British surpass us in Pears, both in quality and quantity; but in Apples they are very far behind us. I would say that if we had laws in this country to protect our orchards from theives, and sabbath breakers stealing our fruit and destroying the trees, and from idle vagabonds, who shoot down our insectivorous birds, the culture of apples to export to Great Britain would be one of the safest investments and most lucrative speculations that any one could enter into. Let many of our wealthy merchants exchange unstable commerce for the more sure and profitable business of horticulture, and plant orchards and vineyards, and we would warrant that the products could be sold in Liverpool at handsome profits. Besides, the very best legacy one can leave to his children is a good farm with an ample supply of fruit trees planted thereon.

Horticultural Notices.

PENNSYLVANIA HORTICULTURAL SOCIETY.

DISCUSSIONAL MEETING, AUGUST 5.

"PEAR CULTURE."

Mr. Walter Elder preferred for the Pear a clay subsoil, deeply tilled, manured and underdrained; and the soil after planting kept just enough stirred to keep the surface loose and clean. He thought the Pear went deep in the ground, because it loved moisture, and insufficient moisture was probably the cause of the crack in the fruit, and blight in the leaves of some varieties. Preparation and after attention had more to do with success, than any particular choice of soil. Pears on quince should be set low enough to encourage roots from the Pear. Pears kept under clean surface need no manure; in grass they should be annually top-dressed.

Mr. Harrison made some extended remarks. In substance he advised a thorough preparation of the soil before planting, underdraining, plowing if necessary, for a whole season before planting the trees, and after two or three years of surface culture, seeding down to grass and keeping the sod closely mown, or, after the trees get old and high-branched, pasturing it with cows or sheep. He cited many instances of healthy old orchards, 74 to 100 years of age, that, within the memory of man, had never been out of sod. Would prune as little as possible, and form the tree by pinching mainly.

Mr. C. H. Miller endorsed the remarks of the the previous speaker, and instanced the peach trees under his care. Those in cultivated ground

had all died; those in grass sod produced unfailing and abundant crops. In Kent, England, which is the fruit garden of Great Britain, *all* fruit trees are grown in sod, and the yield and quality are unsurpassed. The farmers pasture their cows and sheep in the orchard, and also bring their feed there,—ruta bagas, cabbages and the like,—and thus secure a full and cheap manuring for both trees and grass.

Mr. Hayes, when visiting Col. Wilder's grounds, observed that the quince stock of all his dwarf pear trees was covered with soil, and learned that the pear stock threw out new roots, and the dwarf thus became a standard tree.

Mr. Saunders, on the occasion of a visit to the fruit garden of Mr. Coit, at Norwich, Conn., pointed out some dwarf trees which he thought had rooted from the pear stock; next morning the trees were dug around, and no pear roots found. He was doubtful as to the general rooting of the pear stock in dwarf trees. He would generally plant pear trees on their own roots, and bend down the branches to obtain early fruitfulness. In this way fruit is attained in two year's time. As to the cracking of the fruit, Mr. S. differed with Mr. Elder in attributing it to want of moisture in the soil, but thought it due to aridity of the atmosphere. There are two trees in a fruit garden near this city, of the White Doyenné, which have yielded cracked fruit for many years. One of them is this year surrounded by four hot-bed sashes, the top being left open; the fruit is large and free from cracks; the other tree is as usual, the fruit small and all cracked. Thinks frozen sap-blight caused by the action of the sun upon the branches in early spring, while the ground is frozen and roots dormant. Rapid evaporation going on causes blight. He mulches the ground with charcoal dust, and has no blight. All soils are not equally good for the pear tree. Formerly did not approve of nitrogenous manures, but now thinks them necessary on sandy soils. In some parts of New Jersey, where orchards have been sown with grass, they obtain no fruit and have to resort to cultivation again. On stiff soils thorough drainage is necessary. The Beurré Giffard, which, in his light sandy soil does not grow at all, in Baltimore, on a strong stiff soil is excellent. Pinching is good, but may be overdone. He pinches only such upright growers as Buffum, &c.

Mr. Eadie regarded the instance cited by Mr. S., of trees surrounded by a sash, as confirming Mr. Elder's view of the cause of the cracking of the fruit. The sash retained moisture about the roots. He had observed carefully in the old country, as well as in America, and could not recall a single instance of a healthy and long-lived pear orchard in cultivated ground. In the sandy soils of New Jersey where the roots have to travel a long way to obtain their sustenance, they may do well in plowed ground, but he thought it an exceptional case.

MONTHLY DISPLAY, AUGUST 12.

Best Pair Hand Bouquets. Thomas Meehan.

Gladiolus, best six specimens. Mr. H. A. Dreer. They were Bertha Rabourdin, Penelope, Vulcan, Othello, Galathea, Ceres.

Hanging basket, best Mr. Wm. Southwood.

The Committee, Mesrrs. Jas. Ritchie, T. G. Mackenzie and E. R. Hibbert, reported further "Rustic stands of plants, prettily arranged, and worthy of imitation, from W. Southwood; also a collection of Gladiolus, from H. A. Dreer, was very attractive." This collection we noticed embraced 32 kinds, and attracted marked attention from the visitors. After the reports of the committee had been handed in, Dr. James proposed an amendment, that a special premium, equal to that offered for the best collection, should be awarded to Mr. Andrew Bridgeman of New York, for a splendid collection of Gladiolus, received too late for competition, which was unanimously adopted. This collection contained sixty-two varieties, and was by far the finest exhibition of this now popular flower ever made before the society.

The Fruit Committee awarded the premium for the best Peaches to John Landers, gardener to Dr. G. P. Norris, Wilmington, Del. "These were very fine in size and quality, though from pot plants."

Blackberries. One quart, W. Joyce, gardener to President Baldwin—the Lawton.

Special premiums were recommended to W. Joyce for fine Black Prince and White Frontignan grapes. To the President's gardener, for cut Pine-apples. To J. McLaughlin, gardener to I. B. Baxter, Esq., for a "collection of fruit; specially worthy of notice being some very fine Royale Hative Plums, and Beurré Giffard pears; and to S. W. Noble, for another collection, "in which Manning's Elizabeth pear and Red Astrachan apple, were worthy of special mention." H. A. Dreer, Charles P. Hayes, and Thomas Meehan, Committee.

The Vegetables were unusually fine, considering the great drouth, and the premium was awarded to Anthony Felten, gardener to H. Duhring, Esq. S. W. Noble and W. Joyce, Committee.

Dr. James read the "Circular of the American Pomological Society," and in accordance with instructions to that effect, the chair appointed delegates to represent the Pennsylvania Horticultural

Society to the Convention in Boston, on the 17th of September, namely, Messrs. R. Cornelius, J. E. Mitchell, S. W. Noble, Dr. T. P. James, D. R. King, R. Buist, H. A. Dreer, W. Saunders, Thos. Meehan, Chas. P. Hayes, W. Parry. A. W. Harrison and John S. Haines.

Dr. C. W. Grant of Iona, N. Y., was elected to Honorary membership and Mr. W. Smith to Active membership.

The next Monthly Display will take place on the 9th of September. Two Silver Medals will be awarded to ladies, for the best *Skeletonized leaves* and *plants*, and for the best *dried* grasses, ferns and lycopodiums. Premiums are also offered for Dahlias, Roses, Ferns, Orchidea, China Asters, Native and Foreign Grapes, &c. Parties from a distance wishing to compete, can obtain schedules from A. W. Harrison, Esq. the secretary, Philadelphia.

PO'KEEPSIE HORTICULTURAL CLUB.

We have received a very interesting report of the proceedings of this prosperous young society, but without any date when held, beyond the fact that it was "last Wednesday,"—we suppose it was early in August. Messrs. H. & J. Carpenter exhibited 10 varieties of Currants, one of which is unknown to us. The Committee say of it:

"3. Clinton—an excellent table currant, large size and of fine flavor; the mildest in this respect of the white currants, which are less acid than the red."

Mr. H. L. Young's Lawton Blackberries were particularly fine, through having been left long enough to get thoroughly ripe on the canes.

Of Apples the Summer Pippin, by Mr. J. Williams, and the Sour Harvest, by Mr. Wilcox, were worthy of note. Also the Beurré Giffard pear of Mr. Gifford.

M. Williams recommended the Black Currant for wine. It cost about 50 cents per gallon.

An interesting discussion ensued amongst the members on Grape-vine mildew on hardy varieties, from which it would appear that all kinds suffer at times,—kinds that escape in one person's garden suffer in another's. Mr. Vincent, who had 13 kinds, seemed to have the most trouble with mildew. "They were heavily manured on first planting," three years ago, and last fall had manure from Blacksmith shops, placed near them. Mr. H. D. Myers had little mildew, and used little manure. Mr. Carpenter had no mildew, and used no manure but bone-dust, and little of that. Mr. H. L. Young's grapes, on poor slaty soil, had but little mildew. Mr. Vincent did not attribute his mildew to heavy manuring, as some of the members did; but to the sun striking on the berries while they were damp with rain or dew.

PENINSULA FRUIT GROWER'S ASS'N.

A meeting was held at Middletown, Delaware, July 22, 1862. The Cultivation of Peach Orchards was the subject under discussion.

Plowing the orchard was generally recommended, but no definite time agreed on for doing it.

A majority of the meeting thought the trees should be trimmed while growing.

Mr. Stewart had applied coal ashes successfully against the borer.

Mr. Cummins applied air-slaked lime around the collar of the tree, half a peck to each.

Messrs. Semans and Fennimore considered ashes the best fertilizer—half a gallon to a tree.

Mr. Fennimore thought the best ten kinds for cultivation and market, were Troth's Early Red, Early York, Yellow Rare Ripe, Crawford's Early, Moore's Favorite, Mixon Free, Ward's Late Free, Fox's Seedling, Crawford's Late and Smock.

The Association adjourned to meet at Galena, Kent County, on Friday, the 31st of October next.

D. J. Cummins, *President.*

Thos. J. Shallcross, *Secretary.*

FARMER'S CLUB AM. INSTITUTE, N. Y.

In the Premium List, among the other matters, we notice the following of interest to Horticulturists, for which Gold or Silver Medals have been offered.

They can be sent in any time before Dec. 31st. For the best Seedling Pear; for the best Seedling Apple; for the best Seedling Grape; for the best Essay on the Culture of the Pear; for the best Essay on the Culture of the Peach; for the best Essay on the Culture of the Grape—both under glass and out of doors; for the best Essay on the Culture of the Strawberry; for the best Essay on the Preservation of Ripe Fruit; for the best plan of Preserving Fruit without Sugar; for the best Essay on the Cultivation of the Potato; for the best Essay on the Cultivation of Asparagus; for the best Essay on the Cultivation of Celery; for the best mode of Draining, accompanied by an Essay on the value of the same on the various soils, with simple diagrams or plans, suggesting economical drainage; for the best Design for a Forcing-house for vegetables, progagating, raising seedlings, &c., all under the same roof.

THE
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DEVOTED TO
Horticulture, Arboriculture, Botany & Rural Affairs.

THOMAS MEEHAN, Editor.
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Hints for October.

FLOWER-GARDEN AND PLEASURE-GROUND.

Hyacinths, Tulips, Crocuses, and hardy Dutch bulbs generally, must have immediate attention. Crocuses and Snowdrops are often planted out in the grass on the lawn; the former is not very objectionable, as the leaves have so close a grass-like appearance; but the last should never be so employed, the foliage giving, the whole summer afterwards, a very coarse and weedy appearance to the lawn.

Hyacinths and Tulips may be set out in the beds devoted to summer-flowering bedding-plants, as they will, in a great measure, be out of flower before the bedding-time comes around, when they can be either taken up and transplanted to an out-of-the-way place to ripen, or the bedding-plants can be set in between where the bulbs grow, without either much interfering with the success of the other.

As a manure for these bulbs, nothing has yet been found superior to well-decayed sandy cow-manure; but where this is not conveniently at hand, well-decomposed surface-soil from a wood will do as well.

Many kinds of hardy annuals flower much better next spring, when sown at this season of the year, A warm, rich border should be chosen, and the seed put in at once. Early in spring they must be transplanted to the desired position in the flower-border.

Few things are more valued in winter than a bunch of Sweet Violets. A few may now be potted, and they will flower in the window towards spring; or a small bed of them may be made in a frame, which should be protected by a mat from severe frost. To have Pansies flower early and profusely in spring, they may be planted out in a frame, as recommended for the Violet.

Herbaceous hardy border-flowers are often propagated in the fall by dividing the roots; but, unless it is convenient to protect the newly-made plants through the winter, it is better to defer this till spring, as the frost draws out of the ground and destroys many. Where it is now resorted to, a thick mulching of leaves or litter should be placed over the young stock when transplanted.

Chrysanthemums now in flower should have their names and colors rectified, against the time when in spring they may have to be replanted, when they can be re-arranged with accuracy and satisfaction, according to the owner's taste.

Dahlias, Gladiolus, Tuberoses, and other plants that require winter protection for their roots in cellars, should be taken up at once on their leaves getting injured by the first white frosts. The two latter should be pretty well dried before storing away, or they may rot. Dahlias may be put away at once.

GREENHOUSE.

Bulbs for flowering in pots should be planted at once. Four or five-inch pots are suitable. One Hyacinth and about three Tulips are sufficient for each. After potting, plunge the pots over their rims in sand under the greenhouse stage, letting them remain there until the pots have become well filled with roots, before bringing them on to the shelves to force.

Where many flowers are desired for bouquets in winter, a good stock of such as flower easily should be provided, especially of white-flowering kinds, without a good sprinkling of which a bouquet has but a very common-place look. Deutzia gracilis and D. scabra, Philadelphuses, and Tamarix are very good hardy plants to pot for winter-flowering. The Iberis sempervirens is also a splendid white to force for its white flowers. Lopezia rosea is nearly indispensable for giving a light, airy gracefulness to a bouquet; and Camellias and Azaleas cannot possibly be done without.

Many kinds of annuals also come well into play;

among other things, Phlox Drummondii, Sweet Alyssum, Collinsia bicolor, Schizanthuses, Mignonette, and Nemophila are essential.

There are but few things in the greenhouse that will require special treatment at this time. Camellias and Azaleas, as they cease to grow, will require less water: but it is now so well known that moisture is favorable to growth, and comparative dryness favorable to flowering, that we need do no more than refer to the fact.

To watch for the first appearance of insects of all kinds, is one of the chief points of immediate interest in plant-culture. If they once become numerous, it is often better to throw away a plant entirely than to doctor it after the old methods.

For winter-flowering, it is a good idea to keep an eye to those things which are near their natural season of blooming, instead of the more hazardous one of forcing things on that ought not naturally to bloom for months afterwards. We have the natural system pretty well recognized as the correct principle in landscape gardening, and it might as well be introduced into this department also. Roses, of course, cannot be dispensed with; but even here the free blooming Tea and China Roses are infinitely preferable to the Mosses and Perpetuals often attempted. Roses intended for blooming, may be pruned in now about one-third of their strong shoots, and have their weaker ones cut out. As soon as the buds show an inclination to burst, the plants may be repotted in a rich loamy soil, in well drained pots. Oxalises make beautiful objects in the early spring, if potted now. A rich sandy soil suits them well. Three or four bulbs are enough for one pot. They do not do well too thick together. O. Boweii, O. flava, and O. versicolor, are well-known and popular species.

All succulents may be kept in the dryest part of the house, and get little water through the winter. The flat-leaved or Epiphyllum section is an exception. E. truncatum blooms through the latter part of the winter, and so must be kept growing.

If there be any tender plants yet growing in the open border, that it is desirable to re-pot and keep in good order through the winter, no time should be lost in taking them up. Such plants are frequently lost or injured by bad after-treatment. Some few of the leaves should be taken off at the time of lifting, and also some of the more delicate and weaker shoots. The object is to preserve every leaf and shoot entire that can be kept without wilting. After some have been taken off, if afterwards it appears that some are yet likely to wither, keep taking off till the proper balance has been arrived at. It is a good practice, with the aforesaid object in view, to set the plants for a few days after potting in a cool and humid shed.

VEGETABLE GARDEN.

Lettuces sown last month will now be large enough to set out for permanent growth. A common hotbed frame, set on a bed of leaves or spent stable-manure, will enable one to enjoy delicious salad all through the latter part of winter, where sufficient protection against severe frosts can be secured. In this division of our Hints, it is more of an object to preserve them through the winter for the purpose of setting out in the open air in spring. In the warmer States this can be readily effected by their being set out in the open air in a sheltered place. Here in Pennsylvania they often do very well by having the ground thrown into ridges about six inches deep, running east and west, and the plants set out on the northern sides. They have a little straw thrown over them in severe weather, and get through the winter admirably, heading early in spring. The Early York Cabbage is extensively grown the same way. Where the climate is too severe to allow of this, they must be put under cover of shutters, as before described in our Hints.

Brocoli and Endive may be taken up with balls of earth, and set in cool cellars closely together, and they will grow sufficiently—the former to produce good heads, and the latter to blanch beautifully all through the winter.

Asparagus beds should be cleaned, by having the old stems cut off and the soils from the alley ways dug out and thrown over the beds. It keeps the frost from the roots, and thus permits them to grow and lay up matter all winter for next spring's growth. Very early in spring the soil should be raked back into the alleys, so as to leave the roots but a few inches under the soil, as the nearer they are then to the sun's rays, the earlier will the crop be.

Celery must have continued attention to blanching as it grows, care being exercised to prevent the soil from entering the heart. Where very fine results are desired, the plants should be protected from early severe frosts, so as to enable the plants to grow, without injury, as long as possible.

Roots of most kinds, such as Carrots, Beets, etc., should be taken up before the frost is severe. They all keep best packed in sand in the open air, but it is too inconvenient to get at them in winter; hence cellars are employed to preserve them in. Cellars

for this purpose should be cool, say with a temperature of about 45°, and not at all dry. It is not meant that it should be damp, as the roots will become rotten, but it must be moist enough to prevent shrivelling.

Cabbages can be preserved in such a cellar, though most prefer them in the open air. One way is to pack them closely together with their roots uppermost, and then cover them with soil, on which straw or litter is thrown to keep them from freezing. By being packed this way, the water cannot get into the hearts, which is one of the chief causes of their rotting. Where plenty of boards can be had, they may be packed with their heads uppermost, and the rain kept off by the material.

FRUIT GARDEN.

Established orchards, on thin or impoverished soil may be renovated in the following manner: If a tree has been planted say fifteen years, and attained the size we might expect in that time,—get, say ten feet from the trunk, and dig a circle two feet deep all around it, and fill in with a good compost; the effect the next season will be quite marked. If the tree is older or younger, the distance to start with the circle from the trunk will of course be proportionate. A top-dressing will also be of great assistance, as well as a vigorous pruning out of all weak or stunted branches. Moss and old bark should be also scraped off, and if the trunk and main branches can be washed with a mixture of sulphur and soft soap, much advantage will follow. Old decayed bark on fruit trees is always a sign of a want of vigor. When a tree is growing thriftily it cracks this old bark so freely, as to make it easily fall off; but when the tree is weak and enfeebled, the bark often becomes indurated before it has got cracked, and in this state the tree becomes what gardeners call "hide bound," and artificial means must be afforded to aid the tree to recover. In the cherry and plum trees this is easily done, by making longitudinal incisions through the bark with a sharp knife. In the peach and apricot also, this process has been employed with advantage, in spite of the learned theories which have attempted to show up the absurdity of the practice.

Sometimes fruit trees are unproductive from other causes than poverty of the soil, or neglect of the orchardist. They often grow too luxuriantly to bear well. In this case root-pruning is very effectual, and is performed in a similar way to that described above, by digging a circle around the tree, except that the circle is made closer to the trunk of the tree. A fifteen year old tree for instance, may be encircled at five feet from the trunk. No rule can be laid down for this. Judgment must be exercised. If cut too close, the tree may be stunted for years, and if too far, it will not be effective. The aim should be to reduce the roots about one-third.

Communications.

NOTE ON THE CONCORD GRAPE.

BY "FEBRIS VITIS," PLEASANT HILL, OHIO.

I notice in the last number of the *Gardener's Monthly*, that Dr. Grant, of Iona, in speaking of the Concord Grape, before the Pennsylvania Horticultural Society, gives it somewhat of a poor character, placing it far below the Isabella and Cawtaba, as a market grape; while, on the contrary, Rev. J. Knox, of Pittsburg, speaks of it in high terms of commendation, representing it as the most profitable grape in the whole catalogue for general planting.

Now, Mr. Editor, how are we to reconcile this disagreement of the authorities. Shall we account for it by the difference of climate, soil, etc., which exists between the points of Iona and Pittsburg; or is there a disparagement on the one hand and over estimation on the other?

Now I confess this somewhat affects me, as I have been a diligent reader after all the writers on the grape question in the *Monthly* since its first issue. Just about the time I get my mind settled on any one variety for profitable planting, some Horticultural *savant* undoes all my work, and puts me to the performance of the same task over again. Too bad, is it not? Well, I believe the old adage, that "Every tub must stand on its own bottom," holds good in *grape culture*, as well as in any thing else; or, in other words, it is necessary for every one to form a practical judgment of their own, regardless of what others say. I have a border in preparation about one hundred feet long, which I had intended to plant with Concords this coming autumn, had my faith not been somewhat shaken by Dr. Grant's remarks. However, I have not entirely relinquished my opinion of the relative value of the Concord as compared with the Isabella and Catawba. But the question is, shall I plant the Concord or some other new variety? The border was dug or thrown out five feet wide and two and one-half feet deep, last spring, and I propose making it two feet wider yet. The number of vines to be planted in it is twenty-five, placing each vine four feet from the other; to

be trained in the form of a double trellis, or one trellis directly above the other, thus affording each vine the space of eight feet.

Would it be desirable to plant two varieties in the same border, alternating one with the other, so as to have all of the same kind in the same trellis, either above or below? If so, (may I not invoke the *Monthly* for a little arbitration in this case?) what two varieties shall I plant?

I will conclude by saying that I have over thirty varieties of grapes in test, mostly planted one year last spring, eight varieties of which have shown fruit this season. In a future article, if desirable, I will inform you how they are "all doing."

[Every observing man must see by daily increasing experience, the difficulty of taking any particular variety of fruit for universal recommendation. It is not fair to suppose that there is any disparagement on the one hand, or over estimation on the other. The solution of the difference lies in the fact that what does well in one man's ground, and under his system of management, does not do so well under another's different ones. Again, tastes differ. One man prefers the flavor of Concord, another the Delaware, a third thinks a Fox grape superior to both.

Yet it is not to be supposed that there is no such thing as some fruits being more worthy of cultivation generally over others. The difficulty is not with the fact, but with the method of ascertaining it. So far as what Mr. Knox may say of Pittsburg, or Dr. Grant say of Iona, it is a fair index of the comparative view of kinds in their locality, under their culture, and viewed from the stand point of their taste. These may serve as guides, but they should form no rule. A kind to be recommended for *general culture* should have been *generally tried*, and found *generally adapted* to all soils, tastes, and treatment. Two such are undoubtedly Concord and Delaware. This is the experience of perhaps 90 per cent. of those who have tried most of the best known new grapes. Where one has no experience of his own locality, it is wise to follow the ninety who find a fruit generally good elsewhere, than the ten who differ from them.

Of the many that *may be* generally better than these, as they have proved to be in a few isolated cases, we should try sparingly, or wait till they had been tried in many localities, and reported on by others. Of those may name, Allen's Hybrid, Cassiday, Creveling, Cuyahoga, Union Village, Taylor's Bullitt, Diana, Elizabeth (of Rochester), Louisa, Maxatawney, Anna, Logan, Hartford Prolific. These are some that we think likely to be adapted to general cultivation, and will be kinds that the recommendation of no "Horticultural savans" will be likely to lead you to "undo" in a hurry.—Ed.]

PEACHES IN NORTHERN LATITUDES.

BY MR. JAMES WEED, MUSCATINE, IOWA.

In your April number we noticed some remarks in regard to moving dwarf peach trees to cellars, and burying them in ridges of earth, in order to grow this most delicious fruit in cold climates.

When we commenced fruit culture in Iowa, twenty-two years ago, the peach, apricot, nectarine and the Duke, Heart and Biggarreau Cherries, were the objects of a large share of our enthusiasm. The trees flourished admirably in our virgin soil, but experience soon taught us, although we occasionally raised some fruit, that failures from the destruction of blossom buds by extremely cold winters and late spring frosts, were so frequent as render their culture for profit out of the question. We experimented for several years in burying trees in earth, but found the dampness of the soil generally destroyed the buds; we also tried growing in tubs and wintering in cellars, but cellars were too scarce and expensive.

It is now understood that the greatest winter cold of North America is opposite Lake Superior, and that westward from Lake Erie the winter thermal lines bend southward, while the summer thermal lines of the same region bend northward. These are important metereological facts, but do not convey a complete idea of the climate of the valley of Upper Mississippi. The greatest winter cold in the northern regions occurring east of mid-way between the Atlantic and Pacific oceans, above Lake Superior, and the prevailing cold winds of winter being northwesterly, Michigan and Ohio would undoubtedly suffer most from severe northern blasts, but for the modifying influences of the lakes. To the west of the lakes the absence of huge bodies of water in connection with the open prairie character of the country, stretching far to the north and west, there is nothing to modify or oppose the "Northers" which sweep down often to the Gulph of Mexico. It is these very cold and unobstructed winds from the hyperborean regions rushing down upon us occasionally during the winter, that bend average lines of temperature southward, and but for these our winters are mild and most agreeable, as they are dry and very invigorating. These surely are not the "fiery" but the freezing ordeals which many of our more tender fruit trees are unable to

pass uninjured.

But when in his annual return, Sol comes over the lines and the Ice King is driven back to his eternal icebergs, the gentle winds of the "sunny south" continue their influences until very late in the season, affording the finest autumns for maturing all kinds of fruits that can be found any where. This we consider one of the most important characteristic features of the north-west.

What is here wanted, as well as in some other parts of the country we wot of, is an available mode of protecting fruit trees against injury from winter and spring frosts. In a future article, with your permission, we will present a system of protection which may answer.

EVERGREENS.

IV.—DETAILS.

F., LITHCOMBE, VA.

EVERGREEN and deciduous trees are antagonistic kinds. Place them together in equal proportions; or, worse still, mix them up with one another, and the beauty of either will be marred. On the other hand plant them together, though not mixed, on uneven or on rising ground, letting the evergreens flank the grove, or giving them the high places, and the beauty of both kinds will be enhanced; for there is a mighty charm in the deep tint of evergreen foliage, and many a group of deciduous trees will be much improved by the introduction of a few evergeens to their company.

Thus you may a hundred times bring with great advantage evergreen to deciduous trees, whilst you will but rarely, with any success, introduce deciduous to evergreen trees.

The difference of shape between the kinds is as great a source of happy effects to the artist as is the difference of foliage. True, the poplar offers some modifications of the shape of evergreens, and has the rare merit of offering also a good many different tints of foliage: green, dark green, bluish, blue green, silvery foliage. The poplar is a great tree in the hands of the artist, but can it be a substitute for the conifer? Is it not as void of character as the conifer is full of it?

And now look at shrubbery. There is nothing whatever in Nature's vast catalogue of shrubbery that bears the features of conifers, and can be substituted for them ever so poorly. *In deciduous vegetation we find nothing resembling a Juniper or an Arborvitæ.* These kinds are consequently indispensable to him who plants shrubbery; and what is a place, be it large or be it small, without a very liberal share of shrubs? Junipers and arborvitæs moreover *keep small*, comparatively, and therefore have all the attraction of evergreen vegetation without the imposing style, or the solemn look of the family. No wonder if the intelligent gardener sets great store by them.

Of course any other evergreen, so it be young and small, will have the same good effect, and oftener a better one. But the writer in speaking of trees, considers only mature ones, and takes this opportunity of saying that any thing said in these articles about evergreens do not refer to young ones, as these have so different an effect from, and at times even an opposite effect to older or old ones. Take a pine tree tree five years old, and take one thirty-five years old; is there not as much difference between them as between a child and a man? The child smiles; the man is serious.

This accounts for the fact why people, who have planted young evergreens in profusion, earn their own and other people's just praise for it. This accounts also for the fact why the same people, fifteen years or so later, are dissatisfied with their work, and why their friends have by that time ceased with their praise. Ours is often a shifting population, the person who plants does not always own or see his plantation fifteen years later, and with him the spirit of the place has often left too. The young smiling evergreens, when once they get older and serious and darken the place, must be mercilessly cut down, most of them. But what a poor foible that is of most persons *not* to cut down trees in their grounds! The sins of omission in the arts are almost as many as those of commission. "There is," the preacher has said, "a time to plant, and there is a time to pluck up that which hath been planted."

The larger the place the better can the larger growing evergreens be applied. A rule this, that holds equally good with deciduous trees. Forest trees will only do in a park. I have seen white pines, buttonwoods, and tulip poplars standing meekly in a half-acre garden; and they looked very much like a bear in a menagerie, pent up in his cage. A thing can only begin to get picturesque when the eye can take in both it and its surroundings. Hence large trees, requiring a certain distance to be looked at, find their place in the landscape, but not in the garden.

But size is not the only condition why this tree may enter the garden, and that one should be kept out of it. There are different causes at work. We banish, for instance, the cedar from any place outside the broad landscape. Dotted over that, the

cedar loses its extreme stiffness, and its broomy look in the general round lines of creation. There it adorns the scenery, and gives it at the same time that pensive character which is the stamp of our (Northern) American scenery. Put it in your garden grounds, and it will be out of place as much as a statue would be in your indoor snuggery. We must refrain however from particularizing.

As we near the Pole, or the summit of mountains, we see evergreen vegetation encroach on the deciduous one. Gradually we leave the cheerful-looking leaves behind us; our friend, the elegant Birch, even that now forsakes us, and nothing meets our eye but evergreens. We ascend still, the thermometer falls as we step, and now the evergreens shrink in growth and size. When *they* have dwindled down to the dwarfiest dwarfs, we shall have nothing more of vegetation, unless we stoop down to the mosses, etc. We have passed the line, daring to penetrate where even evergreens could not live.

Evergreens, therefore, suggest cold, and a rugged style of nature. In the same way do they affect certain colors to go with them better than with others. In the same way will they sort better with certain styles of architecture, than with others; and above all others with the gothic style. Look at yonder monastery on the rocks! See how well its angels and its spires match the stiff shafts and branches of the countless Fir trees around it.

Look close, though, at this gothic pile, reader; it is not altogether points and angles, on the contrary the circle and the curved lines of the hollow-worked rosettes, etc., seem to be no less the embodiment of gothic style. For this very same reason our gothic trees require the round and curving lines of beds and walks; and the open lawns, with the dome of the sky above; and the broad patches of daylight, to set off their singular beauty. If we dont heed their wants, we shall gravitate into monotony, and our work will be a living reproach to us. As a test of contrasting lines, please mark the different effect of evergreens standing in the four corners of a diamond-shaped lawn; or, of the same lawn rounded to an oval.

And, as a test of harmonious design, I beg you, my reader, to fancy behind this lawn and its evergreens a Grecian white marble structure, without any further background than green foliage on a level; and again, a Norman castle of dark stone, with a background of crags and peaks. How different the effect of the whole.

The arts, indeed, seem to be founded on the basis of Harmony and Contrast. Two forces, which are in eternal strife, yet never destroy one another. Two rules, you may say, which contradict but never nullify each other. Indiscreet harmony, sinking the work into monotony; discreet contrast, elevating it to classical art. This divine discretion marks our true artist,—him as much who reproduces nature with colors on canvas, as him, the landscape-gardener, who reproduces nature with her own materials, on her own soil!

Single trees, adorning a lawn, marking a corner, shading a seat, etc., are fine objects in one's grounds. The custom, however, of "specimen trees," standing around and pretty close to one another, seems to me a "specimen" of bad taste. These unhappy trees remind one of a botanical garden, or of a collection of autographs, or of "samplers;" and when I see such I wish them to be gone, home to where they belong, and be happy. Nature does not plant that fashion. This remark may not be out of place here, as evergreens, stiff in themselves, are mostly chosen to form such a party of detached individuals.

Still more reprehensible is the planting together of different kinds of evergreens. Pines amongst hemlocks, norways among arborvitæs, and so forth, make a jumble, but don't make a plantation. People of different classes, habits and and physiognomy make a crowd, but don't make a "company." Deciduous trees, sorting better with each other, allow us more latitude in this respect; but evergreens are of a jealous nature, and will not bear planting "mixed," whether for a grove, or an avenue, or a group. Skill and study determine what we can plant together, and how and how many. And both skill and study are overtaken and beaten by native genius.

Some things can unfortunately not be taught. The task, for instance, of *making a landscape*, that is to be complete in itself, is very much like the task of making a theatrical play. The author has to bring men's actions, originally spread over time, within the space of a few hours; the gardener has to bring the work, which nature spread over a large space, within a measured space, and within the focus of our eyes. They both must imitate Nature, in outlines, in details, faithfully, comprehensively, and after her very best models.

I have continued these remarks beyond what I had originally intended,—principally through the encouragement of the Editor, and in the hope that the suggestions might be useful, and if in this the writer be successful, she will have had a full reward.

STRAWBERRIES FOR MARYLAND.

BY W. R. PRINCE, FLUSHING N. Y.,

THE State of Maryland furnishes a large proportion of the strawberries that are sold in your Philadelphia markets.

In that State, where so many extensive strawberry farms exists, and which in Anne Arundel Co., cover 600 acres, it is unfortunate that the selection of varieties should be so limited and so defective and composed only of the Stewart, Heart and Scarlet varieties. The first of these comprising about four-fifths of the whole area, is a good berry as to size, color, quality and firmness, but is far surpassed in sweetness and flavor, and greatly so in productiveness, this being an Hermaphrodite plant of the Iowa family, the Pistillate or Female varieties of which yield far the most abundant crops. The Heart and Scarlet varieties appear to be of but little importance or value.

The increasing taste and improvements made in the seminal varieties have extended the collection grown in this State, to over 200 choice varieties, comprising every class, and extending the strawberry fruit season from May to December, the Alpines covering the autumnal months. I will now name a few of the most suitable for *farm culture* to supply the markets, as these require certain points, not indispensably necessary in fancy garden culture. They must be large, of bright color, juicy, sweet, good flavor, firm for carriage, the berry detaching readily from the hull, and the plants hardy, vigorous, and very productive.

First in season the "Welcome" possesses all these requsites and takes precedence over all other early varieties. Next in succession should be the Crimson Eclipse and Sultana, both beautiful berries. After these the Stewart will be in the order of maturity, but it would soon be superseded if the Diadem, Sempronia, Trevirana, or Suprema were grown in competition with it. The Scarlet Magnate and Ophelia should follow, both producing monstrous berries, sweet and of fine flavor, which can be succeeded by the Large Globose, the latest of the large productive American varieties, and unfortunately rather acid, but very sprightly and beautiful. The Alpine varieties which produce first until the winter sets in, have not been grown with us for the market, but at Paris they are grown very extensively and the markets are abundantly supplied till Christmas. The same success may be attained here whenever proper attention is given to their culture. The Triomphe de Gand is now being grown quite extensively for market. It being of the Pine family, it must receive special culture and high manuring, and be grown in hills; but under no circumstances will it produce half the crop that will be yielded by the varieties I have recommended.

[We believe the varieties recommended by our correspondent have been but little, perhaps in some instances not all tried in Maryland, and it would be best to try them sparingly before planting largely. We need scarcely repeat what is now so well known, that the strawberry is so very local in character, that the experience gained in Flushing would not be an infallible guide for a Maryland planter.—ED.]

NOTE ON THE INFLUENCE OF THE STOCK ON THE GRAFT.

BY MR. A. SKEAN, POTTSTOWN, PA.

A WRITER in a former number, speaking of the influence of the graft on the stock reminds me of two trees growing on my premises. The trees, or tops, are pears of the red or Catharine variety, grafted on the common Crab pear which suckers very much when "let alone;" but when the Catharine pear is grafted in it, the sucerking stops, no doubt owing to the great amount of sap in the graft, which will overgrow the stock. These pear trees were grafted on *side limbs* and as a consequence the trees are lop-sided, and the main stems of crab, are like withered trunks, with but little life in them, the sap having been nearly all withdrawn to the sides—to the thriftier wood.

CURL IN THE PEACH.

BY S. T.

AMONG the pests to which the Peach is liable, the "curl," though not by most persons considered of much consequence, is I think, worthy of more careful observation, to ascertain if possible its cause and the cure.

It has been attributed to frost by many, and by others to insects, but whether either of these is the cause, or whether indeed it is not owing to some constitutional defect of certain varieties, I cannot now determine, though the fact that some varieties suffer more from the curl or are more liable to have it than others, leads me rather towards the last conclusion. I have now about forty varieties, most of which are bearing fruit this year. Some that were the fullest of blossoms in the spring, lost afterwards every leaf by the curl, and day by day the young fruit fell, until at last there was not a peach left. The variety which suffered least from

the curl, and of which every tree is now loaded with peaches, is one which I received a few years ago as Druid Hill. It also did best last year. The next best are Grosse Mignonne, Smock, Snow, Ward's Late Free, Morris White, Old Mixon Free and Crawford's Early.

George 4th, Royal George, Lagrange, Honey, Red Rareripe, Stump the World, Susquehanna and New York Rareripe have lost almost every peach, though very full in the spring.

In reading the *Monthly*, which I have done from its commencement, I have always prized those articles which had been contributed by observing *working* men, and if every man who plants, would as he looks over his trees, or as he walks among his flowers note any peculiarity, and from time to time give the readers of the *Monthly* the benefit of his observations, we would have in time a vast fund of information.

[It seems to be certain that the curl is owing to cold, whether the injury is received while in the bud; or whether it is the consequence of cold after the leaves have expanded is not clear. This could easily be tested by putting a tree liable to curl after it has been out all winter, and keeping it in a greenhouse before the leaves expand. It is to be regretted that those who have time and conveniences for experimenting, do not settle these questions for us. After the war is over, we hope to see a National Experimental Garden established, where these things may be tested for the benefit of the whole horticultural community.—Ed.]

A NEW SORT OF GARDEN.

BY JOHN M'G., NEW YORK.

"Friend John," said one day to me my friend George, when I met him in Wall Street, "you must come along with me sometime; we'll go by the boat, and I'll show you my lot."

That was ten years ago. A seat on the Hudson, rustic luxury with city comforts, was the rage, and lots brought very high prices. I went along. A weary march up the hill, dust begrimmed, climbed over a fence, and there we were.

"This the lot, George?"

"This *is the* lot, John."

A pause.

"Well, John—"

"Well, George—a very fine view indeed; the Hudson is a very fine river, indeed."

"Get out, John; I did not bring you along to admire the Hudson. What do you think of the lot?"

"It's a rum one, George. If a man was suicidally inclined, and had not made up his mind as to what route to start on, he should come out here where I stand, let go, and tumble down this hillside. He would be in eternity in no time."

My friend George did not take my speech amiss. He knew as well as I what he had got. He had made a big "trade" with somebody, and the last item of many things he was to take, was this rough sort of a lot. There was about an acre and a half of it, with stone enough on it to build a dozen cathedrals, some oaks and some cedars. It could not be excelled in steepness.

"And are you going to build and improve, and to take your family out here?"

"I am, indeed, John. The lot cost me nothing, you might say, I did not consider it when I made the bargain. So I may as well go to work and spend the price of a good lot of the same size on it."

There I recognized my friend George. He had made his money from nothing at all, he loved obstacles, and generally got the better of them. He had bought a problem, and was now going to work it.

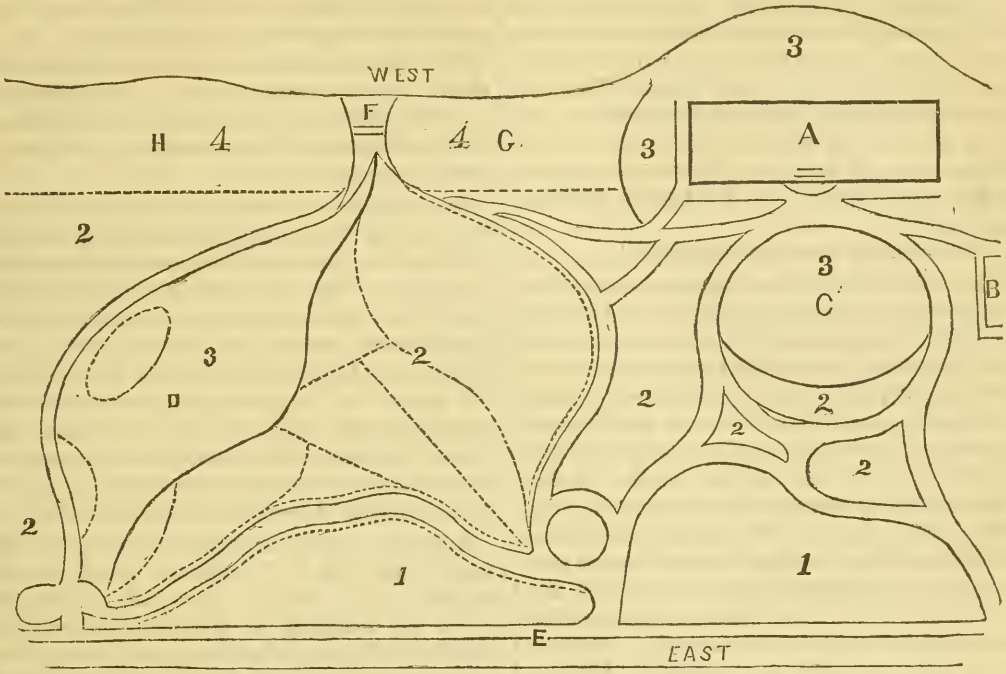
Its solution may be seen, though imperfectly, on the accompanying sketch. Every now and then I visit him, and when last ther—"George," says I, "you must give your experience to the world."

"If you think so, John, I have no objection. Come out on the lane and sketch the place from above."

I did so. When he joined me, he said, assuming the ludicrous air of the showman who explains the animals: "This place, ladies and gentlemen, was one of the roughest places in creation, unfit for any body to live on above the squirrel or the bird. Its possession happened to fall to the lot of a biped of the order Mammalia, who was vain enough to try his hand and brain on the task of reducing untamed nature to subjection, and making the stubborn lady minister to the comfort of his pretty extensive family. The above-mentioned biped found a steep hillside of very unequal levels, and he went about it in this way:

"Ladies and Gentlemen, you are supposed to stand here with my friend John and myself, in this line running past my place, and you overlook it. You stand on a sidewalk, which is at the same time the top of a wall, eight feet high, as far as the middle gate, and five feet high from the middle gate to the gate on your extreme right. These two carriage entrances are made on embankments, the sides of which are completely hidden in shrubbery and tall trees, so as to diminish the sense of "banking" facilities.

"Leave the shop, George," said I, "and go on."



A, house—B, stable and barn—C and D, lawns—E, side-walk of the lane—F, ravine with bridge across—G, children's department, open air gymnasium, etc,—H, potato patch.

"The gate on your extreme left, John, opens on a stairway, which, however, my own children spurn to use, preferring rather to run down the steep hill, spoil the grass and laugh at their parent's injunctions—"

"Order, George, order, stick to the question."

"Unaccustomed as I am, ladies and gentlemen, to public speaking, you will please observe in trying to make the place enjoyable as far as human money and skill would admit, I prepared terraces or plateaus. Thus, on the plan friend John has made for you, you enter by the middle gate or plateau No. 1. Take to the left, and the road leads you down past level No. 2, to level No. 3, which is a lawn (with a bed of Rhododendrons on its edge), flanked on the left by the higher level No. 2. Follow this road, as it winds and you descend to the lowest level No. 4, very level, level indeed, levelled regardless of expense, to form a potato-patch. The passion of raising and eating the best potatoes, growable in these United States, being one of the weak sides to which the owner of the place owns, much to the amusement of wiser people; which passion he very unsuccessfully tries to repress, and for which he claims the public's indulgence, as it is his nature, and he can't help it."

"Question, George, question."

"If you start again from the middle gate and descend past the circle with the straight road, then you enjoy the sweep of No. 2, the largest of the plateaus. Not a uniform level though; I did not try to shave nature so close, (a Wall Street look went along with the words), for this plateau. No. 2 is really level only on your left side, whilst on your right there are gradual descents. This somewhat straight road is also the dividing line of the place, all the fruit and vegetables being confined to the left or south side of it. Let us come back now to where we started, the middle gate," George continued— "and follow the road leading to the house. It's a misfortune that the house lies at the bottom of the place, the water all running down towards it, and the whole place almost to be taken in at a glance when one stands in the lane. But this is the case with a great many residences on the Hudson. The terraces, with reference to the house, could thus be better obtained; I also liked to have the garden before me not behind me, and finally and conclusively, I did not own the ground below me, and so had to make the best of it. We are now on the road to the house, and, passing under plateau No. 1, we gain plateau No. 2, and here enjoy the full

sight of my house, with a fine lawn (No. 3) before it. This lawn is bordered on the east side by the upper terrace, and confines the view from the house; but it is not a steep wall hurting the eye, but a rather gentle declivity, and well planted. The house stands on the same plateau, behind what we call the promontory, on which we can see up and down the panorama of the river. On the same plateau also stands the stables, etc. For further particulars apply to—"

"That will do, George, that will do."

The novelty of my friend's garden does not consist merely in the difficulties surmounted, but in the use of the ground gained. Fearing that he and his family would get cramped, and not have elbow-room sufficient, he partly extended the plateaus into real overhanging ground, partly shaved them down to the easiest possible ascents and descents, thus obtaining the most "walking surface," as he called it. The real novelty however is the absence of a vegetable garden proper. "Who would pleasure about among vegetables," said he, "we may as well promenade among butcher's stalls." On the other hand living in the country and buying vegetables of the hucksters, was an intolerable thought. So he tried to cultivate vegetables in a new way. He raised them from humble and lowly vegetation into sightly beings. For instance, all the low growing things, bush beans, etc., also strawberries, are made into ribbon borders. Their monotony is interrupted by single plants, standing between them, say a tomato, a squash, an egg-plant, all trailed and cultivated as if they were the choicest fuchsias. Monotony is nowhere tolerated. Dahlias and hollyhocks face the vegetable plots here and there, and outshine the humble inhabitants. His best success is with lima beans and raspberries. They look as picturesque as a vineyard, owing not only to the location assigned them, but to the space given each plant, the high cultivation, and the neatly painted poles. The large terrace No. 2, is laid off into plots of varied shape, indicated by dots, of which that one running into the point, west of the ravine, is in corn, and looks charming. Not a vegetable but is grown by him. Each gets its fullest value by the utmost care of cultivation, and it is made sightly to the eye by the space allotted to it, and by being planted either singly or in small groups. I had no idea that asparagus, gooseberries and turnips and cabbage-heads could be grown in so interesting a fashion.

My friend did not plant an orchard either. He grudged the space to the tree, and may be I shan't get to eat their fruit said he. But he planted dwarfs of every description along the walks, and so without having an orchard he has more fruit and of the choicest than he can consume.

The only inconsistency is the potato patch, why should he plant potatoes at all? Thus there are such inconsistencies in every man, and metaphysical investigations generally don't clear up the case, so we let that pass.

The thick lines on this rough denote the walls of the terraces. The most perfect drainage is throughout the place, without it I believe it could not exist very long. The long sunk wall bordering the eastern line of the place is planted with grapes.—By judicious planting and massing of trees and shrubs much has been accomplished toward making the ground feel larger than they really are. The profuse planting of ivy and vines of all kinds, particularly against steep sides, gives the place a rather old look and neutralizes that most uncomfortable feeling of newness, so often met with.

I cannot hold up as a model for imitation, this place of my friend. It costs too much to make and too much to keep up. But its description may be of use, inasmuch as many a place will offer stubborn difficulties of similar nature, though on a much smaller scale, and these may be overcome by such pertinacity, genius and expense as my friend George bestowed on his.

NOTE ON THE GROWTH OF THE OSAGE ORANGE

BY A. W. CORSON, PLYMOUTH MEETING, PA.

The Osage Orange *Maclura aurantiaca* not being a native of the Middle or Eastern States, and having been seldom planted, here till within the last 20 years, and then generally as a hedge plant, its rapid growth when planted as a tree is little known; I therefore send the following account of its growth.

My specimen tree was planted too near to other trees to permit its full expansion, and after repeatedly cutting off large branches to keep it within proper limits as regarded the trees near it, I thought it best to cut it or some others away, and judging that it could be spared the best, I had it cut down last spring, and the stump at two feet from the ground measures 17¾ inches across in one direction and 18 inches in the other, upon the wood exclusive of the bark, and the annual rings show 27 years growth, from this I judge, that it will require much trimming to keep it within proper limits as a hedge plant.

CHAMBERLAIN'S MOSS BASKETS.

BY MR. L. WYMAN, JR., BROOKLYN, N. Y.

THE basket is made of galvanized zinc wire, within which is placed a small zinc pan, to contain the fertilizer, over which is placed a small plate of zinc perforated with small holes. Within this pan is placed the vitadoran mixed with fine moss and a very little sand. The plate with the perforated holes is placed over it, and a layer of moss placed upon the plate, upon which the plants are placed and covered with a like mixture of the moss and fertilizer—about half pint of fertilizer being all that is necessary for a good sized basket. The zinc pan is to be surrounded by wood moss, closely pressed between the pan and wires, and your basket is complete.

The most remarkable part of these baskets of plants, may be found in the fact, that *no earth is used in the growing of the plants contained within them.* During the whole period of the growth of these trees and plants, no change, or application has been made to the same, save the application of pure water.

[We have given but a portion of Mr. W.'s communication, the other portion containing only matters with which our readers have been already made acquainted.

It appears now for the first time that Mr. C.'s "patent" is not for the basket but for a "special fertilizer"—a "Vitadoran" or life—something.—This confirms the impression we had before formed, that Mr. Chamberlain's undoubtedly great success in growing fruit in baskets, was in a great measure due to his excellent skill as a gardener, rather than to any new discovery in the principle of plant life.

We are very sorry for Mr. Chamberlain's own sake that there should be such an evident desire to envelope his processes in mystery, and such an apparent reluctance in affording the public any little information that it has a right to look for.

None but the ignorant advance their dollars on soap pills, or sugar water mixtures, with grand word titles. A straight forward statement of the comparative superiority of his wire basket, and an explanation of the soil he uses; with a small treatise on the details of his system of management, would not, we think, have reduced the profits his skill deserves.

Respectable people are naturally suspicious of "open your mouth and shut your eyes" advantages; while public journals whose duty it is not to help to keep secrets or to praise them, but to spread information, and to unravel all mysteries, can give Mr. Chamberlain no aid beyond what their advertising columns afford, in enhancing the substantial reward a free exposition of the details of his practice would have justly entitled him.—ED]

REJECTED STRAWBERRIES.

BY A FRAGARIAN.

IN addition to the List of Rejected Varieties published in your August *Monthly*, the following have been rejected and may well be included in the list. I should have added that some were rejected as being old exploded varieties renamed.

Exhibition is old Prince Albert; General Havelock is old Cremont; Omer Pasha is old Myatt's Eliza, &c. Ajax, Athenian or Georgia Mammoth, Barnard's Early, Belvidere, Burr's Ohio Mammoth, Crystal Palace, Duchesse de Brabant, Duke of Kent, Highland Mary, Isabella, Keen's Seedling, Macey's Seedling, Myatt's Mammoth, Myatt's Surprise, Nicholson's May Queen and Fillbasket, Necked Pine, Nonsuch, Osband's Mammoth, Pistillate Keen, Prince Royal, Robinson Crusoe, Surpasse Triomphe, Fingley's Scarlet, Washington, Willey.

La Reine with scarlet berries is spurious, the true variety is white.

TRANSPLANTING TREES.

BY H. ST., CHARLESTON, SOUTH CAROLINA.

MR. MEEHAN:—Allow a little space in your esteemed journal to a very old hand, who has read the articles under the above heading in the December number. Its author states three rules, as laid down by an old Amateur Gardener, to transplant trees with success. No. 1, "place the tree exactly as it stood before." A broad rule indeed, to which your humble servant does not assent. If a hardy young tree in average health is concerned, it matters little if you turn north side to south. On the contrary turn its shabby side—most trees, like all man and tree kind, have *one* weak side—to the light, say southeast, and the strong side to the direction of the bleak Rocky Mountains, viz.:—northwest. The strong side can bear the absence of light and the rough blast, the weak one will then get strong, and your tree will get nearer perfection. Further, look also a little below, we must not always look up, you know. If the roots are not alike, numerous and strong, put the tree so that the weak part is nearest the best part of the hole, no matter what the bearings of the compass have been in its original place. The best part is that part where the roots after more or less years

of growth will reach, according to want, moist or dry stratum, where they will not meet with a ditch, or a firm carriage road, or a lot of rubbish, or the formation of a wall.

Rule, No. 1 should read. "There is no rule as to position of tree," but look at your subject, consider its hardiness, its requirements, examine its parts, crown, branches, trunk *and* roots, weigh the the nature of the soil, the surroundings of the hole, future neighbors of the tree and *their* position, ascertain the bearings as to light and shade, shelter and exposure—and then place your tree accordingly. If any reader of the *Gardener's Monthly* deem that too much trouble, let him please remember that planting is a profession, and that a practical gardener can quickly enough form his judgment; let him therefore place his confidence in such a man. As I do not want to be misunderstood, I add that I respect the amateur, if he goes to work with a heart that feels real pleasure in nature, such a man will reflect and willingly spend his time in the work.

Rule, No. 2 reads. "Plant in the increase of the moon." Many a reader will here have exclaimed, "Moonshine, all moonshine!" Not I, Mr. Editor. The moon acts on all creation, children and men not excepted. Its action is most *evident* on the ocean at least, but is not the less sure on other things, though not ascertained as yet. The moon then lifts, exerts and stimulates. For that very reason I would prefer to plant in the decrease of the moon. Inasmuch as the tree requires some little time to settle, it cannot be ready to grow at once when put in. Ten to one, there is but little soil around its rootlets for the next fortnight. Now, if you plant in the moon's decrease, the tree will, at the increase of the moon's light, be in the better position, will not be called upon without having the strength to follow. The same holds good of fall and spring planting.

Rule No. 3. "Transplant in the original soil." Old Amateur Gardener, I admire you, if you will but let me! But no offence meant. Routine and hearsay are the baneful weeds in our science, and how many times have I heard say the same thing. If nature had kindly provided a twitch in the toes to be felt whenever a person repeats something from hearsay without reflecting on it himself, Hearsay would have died out long before this.—Rule No. 3 then should run. "Transplant in such soil as the tree wants by its nature." That is to say, don't expect to grow a fine Scotch fir in the alluvial soil of the valley, nor a fine weeping willow on the gravelly mountain side. It reminds me forcibly of the special pleadings of Nurserymen. *My* trees, says A, are grown in rich soil, are vigorous and healthy, and are sure to move successfully to any locality. *My* trees, says B, are grown in poor soil, and on a bleak spot, are vigorous and hardy, and are sure to move successfully to any locality, (except where they fare worse.) It is all one, Mr. Editor; give a tree the soil that suits it, that is "original" enough.

If, however, we have to deal with half hardy trees or shrubs, or with a big tree, or with a patient, or with any uncommon circumstance, then of course all rules are at an end, and the "Amateur Gardener" hardly wanted to legislate for them.

When a man, however, criticises so much as I have done, he is expected to say something of his own. Therefore must I ask to be excused, having nothing to offer. The only thing I would have said,—plant young trees to ensure success. Even that, I find has been said already in your journal by Mr. Amram, and much better than I could have done.

[Looking over some papers in our drawer recently, we took up the above communication from an old South Carolina correspondent, which has now been over two years in our possession, and which at the time we laid aside, through having been received after the general planting time was over, and our having a stock of more seasonable matter on hand. We give it now, as the planting season is at hand, not only as containing good hints from a practical and excellent man, but as carrying the memory back to happier times, such as we hope again to see.—Ed.]

A PLEA FOR FRUIT GROWING.

BY PRESIDENT BROOKS, OF THE FRUIT GROWING SOCIETY OF WESTERN NEW YORK.

[We give here the opening address of Mr. Brooks, at the meeting on the 25th of June last, at Rochester, considering it one of the happiest efforts it has been our fortune to read.—Ed. G. M.]

Scarcely any worldly interest is of more importance than the one you have met to consider; scarcely any has been treated with more indifference and neglect.

In the brief record of man's early history, we are told that "the Lord God formed man of the dust of the ground" put him into a garden and there made "to grow every tree that is pleasant to the sight and good for food." Yes, good for food.

He who wrought this miracle of miracles—man—and knew his wants, was careful to tell us, as His

first announcement succeeding that creation, that He put man where there were trees "good for food," with the command to dress and care for them.

If the business men of this age were getting up a world, about the last thing they would think of would be a fruit tree, and about the last thing they would do would be to care for it. Fruit is rarely in our bills of fare, or comes in questionable shapes. If moderns have all the ailments that "the Elixir of Life" is warranted to cure, they had better consider how they came by them; possibly they may conclude to substitute apples and peaches for pastry and pork. It is my firm conviction that no person can enjoy uninterrupted health without the regular use of fruit in its ripe and natural state. In this I am supported by the highest medical testimony.

Profoundly as I admire the ladies, and admitting them to excel McClellan himself in "masterly combination," I will die before I will admit that they can ever flavor a Hooker strawberry or a Seckel pear. Whoever expects a French cook, or anybody else, to equal in richness and delicacy of flavor the products of the trees, pronounced on divine authority good for food, is audaciously unwise. Then let us have more fruit as a part of our regular meals.

Fruit, like everything truly valuable, must be sought with care and pains. The glittering prizes of this world are not drawn by careless hands. Richest gems are deepest down; brightest glories bought with sternest sacrifice; no wonder, then, that these fair products that have gathered perfume and flavor from Heaven's choicest stores come through much tribulation. True, here and there a bush or plant, revelling in forest mold mixed by God's own hand, gives us precious fruits, to show how things grow in Paradise; but the rule is if a man will not work neither shall he eat. I suppose a just God has sent armies of caterpillars, and all sorts of nasty worms, blights, and mildews, to punish laziness and indifference, and teach us all that eternal vigilance is the price of—*fruit*. Multitudes of men and women will start up and say, We have tried every thing; we have smoked, snuffed, ashed, limed, and kerosened the worms, till we have killed the bushes. What more could we do? I'll tell you. These enemies have been making their approaches for years; they first sent out their skirmishers, then established their pickets, but we paid no attention till they made their assault in full force, and then we were overwhelmed. Our agricultural and horticultural journals have been giving pictures of these insects for years, and telling us to be on our guard; but we paid no attention. When they were few we could pull their heads off, which I feel confident is a "certain cure;" but having outnumbered the locusts of Egypt and filled the ground with their deposits for another year, it will take a good deal of dust and smoke to use them up. Still, the regular use of slaked lime will kill the currant worm.

We want more thorough knowledge in all the departments of vegetable and animal life. We need more rigid scrutiny, a deeper insight into the causes and influences that work unseen by our careless vision. Learned professors, forgetting for a while the stars beyond our reach, the dead dialects, and the lowest strata, should strive to unfold the conditions of healthy growth and acquaint us with the weak points of our insect adversaries. We want sentinels at every point of observation. Deep and profound research should unfold hidden mysteries and bring to light the enemies that assail us. If a tree blights in this locality, and not in that, we should know what is peculiar to each. When different results are obtained, observe the precise difference in treatment; do it carefully and critically. Nature's laws are fixed and immutable—every tree and plant obeys them—there is no such thing as caprice or accident. Let science unfold these laws. If a result is obtained, we have only to put everything in that precise shape again to obtain the same result without any variation. There is no uncertainty of results, if you know your instrumentalities.

You have come together, gentlemen, to talk and to listen; to exchange what you do know for what you don't know. Where there is so much to learn, and so brief a period to learn it, it is our privilege, it is our duty, to avail ourselves of the knowledge and experience of others, and so thoroughly furnish ourselves for our work in the shortest possible time.

I take this occasion to express the great obligation that the whole country is under to gentlemen of large experience and matured judgment in fruit-growing, who come here from time to time to communicate, without reserve, what they have learned on these subjects, and I ask, in all seriousness, of the public at large, a respectful hearing. The acknowledged difficulties that beset the growing of the finer kinds of fruit, furnish reasons enough for counsel together.

More than that, we need to have our interest *excited*, our efforts awakened, our enthusiasm kindled, by these discussions, these exhibitions, these friendly greetings.

If I knew all about fruit growing, I would make a pilgrimage here three times a year, on the same principle that the Arab goes to Mecca, the Catholic to Rome, and our Methodist friends to Camp Meeting. I always go home determined to dig about my trees more thoroughly, and put on a little more manure.

The neglect of fruit trees throughout the whole country is positively horrible. It comes among the catalogue of crimes: for no man has a right to leave out of his own life, or out of the life of his family, any comfort, or pleasure, or profit, which might be theirs. Hoping for a continued and an increasing interest in our meetings, and in our discussions, I bid you double your diligence in this good cause.

THE CULTURE OF BULBS.

BY WALTER ELDER.

It is generally hoped that next spring the sunshine of peace and prosperity will again gladden our beloved land. How happy if this glorious consummation should take place upon Washington's birthday (the 22d of February), and by the time the glad tidings will be proclaimed, and the army of Mars give way to the soldiers of Flora; the Crocus, with his sturdy and gallant troops with blue coats, white caps and yellow trimmings, will lead the van; and when his ranks get thin, Hyacinth will bring up his division, clad in the national colors,—red, white and blue,—and fill up the gaps. Crown Imperials will use their batteries to the best advantage. Narcissus, Jonquils and Polyanthus will take the field with their brigades. Tulips and White and Orange Lilies will sally forth with their dragoons. Gladiolus and Iris will bring up the rear with their lancers. Tigridia will present the cups of concord; and Tuberose will introduce the ladies, dressed in white and perfumed with the sweets of Arabia, to consecrate the national jubilee.

Now is the time to make appropriations for the purchase of bulbs, and have them planted forthwith. This is the right time. Plant them by thousands in public squares and parks of cities and in private gardens. Make every town, village, farmhouse and cot shine with the blooms.

Crocus is a native of many parts of Europe and Greece, is of easy culture, the first showy flower in the garden, and is universally admired. Hyacinth is a native of the Levant, one of the most gorgeous and fragrant spring flowers. Nothing can surpass its rich, waxy blooms. Tulip is a native of Asia, and from its matchless markings, it has derived the appellation "Gaudy Tulip." So numerous and different are the varieties, that they are arranged into four classes and sub-classes. 1. Bizarres have a yellow ground, with markings of scarlet or purple. 2. Byblœmens have white ground, with markings of purple or violet. 3. Roses with white ground, marked with rose of clear red. 4. Selfs are all of one color, or nearly so. The above are technically called florist's flowers. The other varieties are Duc van Thol, Clarimond, the Parrots, and the double varieties.

Narcissus is also a numerous genus, of which Polyanthus Narcissus, Jonquil, &c., are branches. They are all of a robust growth, very beautiful, and delightfully fragrant. The Double White is a most charming flower, and equals Hyacinth and White Lily in fragrance.

Iris is also a numerous genus, and highly improved in varieties of late years. The Chalcedonian is considered the finest species; yet the Xiphium, Xiphioides and Persica are all beautiful species.

The Gladiolus has been very highly improved in varieties. The blooms are of the most dazzling brilliancy. We saw a bed of them in full bloom in the exotic nursery of Peter Mackenzie & Son the end of July last, and they surpassed in glittering splendor any sight we ever saw.

The numerous species and varieties of Lily brought into notice within the last ten years far surpass all former expectation, and have given a fresh impulse to their culture.

Tigridia is not of numerous species, but the blooms are most beautiful; in shape like a fancy teacup, beautifully and regularly spotted.

Tuberose is well known as a fall flower of rich, waxy white, and sweet odor.

In Holland many of these bulbs have been grown to greater perfection than anywhere else; perhaps for the reason that they mix *sea sand* with loamy soils and plenty of rotted manure. Doubtless the salt in the sea sand greatly promotes the thrift of the plants, and enlarges, enriches and beautifies their blooms.

A CROP OF GRAPES IN EIGHTEEN MONTHS WITHOUT A PARALLEL.

BY MR. E. FRYER, NEW LONDON, CONN.

Under this heading Mr. R. Buist, of Philadelphia, writes an article in the September number of the *Monthly*, brief, practical, and of its integrity we doubt not; but we firmly believe that the production of that wonderful crop of grapes was such an accident as only would result from the practice

of one wholly ignorant of the culture and the requirements of the grape-vine; for none other would allow vines thirty months from the eye to produce such a crop, unless, indeed, he wanted or intended to throw them away and replant with others, to be in turn overborne and thrown away.

It is well known to every practical grape-grower, that to insure a *permanent* bearing capacity, he must first give strength to both roots and branches before he allows it to bear a full crop; and that, on the contrary, whether through wanton carelessness or ignorance on the part of the gardener, the young vines are allowed to overbear, their constitutional vigor is impaired. In some cases they never recover; and only by skillful handling can they be afterwards restored.

I have known instances of this overbearing of young vines in which it would have been better for the owner, and much more satisfactory to the gardener, to have pulled up the overborne vines and planted others in their stead to be better treated.

The German vineyardists set out their vineyards with two year old plants, and generally let them grow three years without bearing. The fourth year they are allowed to bear, and even then sparingly. In this way they secure that equal balance between roots and branches so essential to the future—say *permanent*—welfare of the vine. The same rule, with due allowance for better plant food and culture, holds good with regard to plants under glass.

Forty pounds of grapes from a vine eighteen months planted is like killing the goose that lays the golden eggs.

The *elevated* border is certainly the best that can be constructed for vines planted exclusively outside the house, though the latter practice is now generally condemned by the best practical men. The "blue glass" I do not understand the action of, and therefore do not criticise, but leave it in the hands of the philosopher, who, if it has any influence, I hope will enlighten practical men on the subject. One thing I may be justified in saying, it never put on that forty pounds of grapes.

Mr. Buist also says, "You will thus see that high professional skill has not produced the crop; for there have been three different head gardeners during that period" (eighteen months). He says, also, that the gardeners, or some of them, were not skillful. All this we may verily believe. If a gardener feels no inclination to remain in a new place, or sees no prospect of his doing so, it is not to be supposed that he will take an interest in his practice, the usefulness of which will not manifest itself for years, while his tenure may be only for a few months. This is not to be expected from human nature. Let the gardener have a prospect of a permanent situation, a fair compensation, and a moderate quantity of "non-interference," and he will not murder the vines, fruit trees, or any thing else under his charge, by over-cropping; but, on the contrary, will perform every operation with a view to the continued prosperity of every thing he has charge of.

[It is well to remark that Mr. Buist is one of the oldest and most practical of the present race of grape-growers, and there can be no doubt but that he, as well as our correspondent, is fully aware that hundreds of young vines are annually ruined by being suffered to over-bear. On this point there is not the slightest difference between them. But the difference is just this: Mr. Buist, with this knowledge of the generally injurious results of early over-bearing, and with these vines referred to before him, judging from appearances which he saw and which our correspondent did not see, believes that these particular vines will probably not be injured, and he suggests, as the consequence, whether there may not be some rule of practice discovered by which we may get more abundant crops of grapes from young vines, without injury, than we usually do. We should be glad to have general attention called to this question; and in order to avoid misunderstanding of the real point in Mr. Buist's article, we have thought proper to correct Mr. Fryer's view of the case as we understand Mr. Buist.

With regard to the last paragraph in Mr. Fryer's letter, it is a question which will admit of little discussion; as what a gardener's course should be, when not appreciated, will depend on many contingencies that may arise with each case. As a general rule, the man of honor, so long as he is receiving the wages of his employer, will do his whole duty to that employer. The expectation of being but a few months in a situation, though it may alter the spirit with which he goes to his task, will not affect the justice with which he will endeavor to treat it. Yet Mr. Fryer is, undoubtedly right in the suggestion, that when a really good gardener, by a life of study and observation, has made himself master of his business,—difficult of mastery under the best circumstances,—interferences in his mode of procedure, and which he feels will seriously injure his success, are very galling and annoying; and very much of the dissatisfaction some find from their gardeners arises from this mistaken course.—Ed.]

The Gardener's Monthly.

PHILADELPHIA, OCTOBER, 1862.

☞ All Communications for the Editor should be addressed, "Thomas Meehan, Germantown, Philadelphia," and Business Letters directed to "W. G. P. Brincklor, Box 406 Philadelphia."

☞ Persons sending two new Subscribers for 1862 in addition to their own, with $3.00, can receive a copy of our First Volume, (1859) free. All persons who have paid their subscriptions for 1862, by sending two new Subscribers and $2.00, can receive a copy of the same.

TO ALL OUR SUBSCRIBERS.

It is the part of wisdom to look forward at possibilities and prepare for such events.

Thousands of our neighbors have gone to the war. How many of these are our subscribers? How many of them will be left to us on the first of January, when our new term of subscription commences? No one can answer these questions.

Some of them, we know, are gone, and it is, therefore, a certainty that our present list will be reduced. Will the new subscribers that our friends always obtain for us equal these losses? Perhaps so—perhaps not.

This much is certain: we cannot afford a greatly reduced list, and we feel equally certain that *the Monthly must be continued.* The editor, not depending solely on the *Monthly* for support, will stick to his post, if not one cent of remuneration accrues to him for the many hours of hard labor he will have to spend on it. Those who have gone to the war, to preserve to us all that we and they too value, have a claim on us to preserve for them, at a sacrifice, if need be, whatever they cherished while still with us. We feel, therefore, an obligation to them to sustain the magazine for their return, as well as for the pleasure and profit of those who remain. Our labor we will cheerfully sacrifice; but of our cash means we have none to spare. Several of our friends, who feel as we do, have nobly offered, in case we meet with such a difficulty, to sustain us by a subscription. This, though we fully appreciate the kindness, we decidedly object to; for we would not start the year at all if we felt we had not ample means to carry it through to the end of the term subscribed for.

What we propose to do is this. In case our list is so low on the first of January that we should not feel justified in going on as it is, we shall raise the price to $1.50 for the current year.

We do not want *subscriptions* now, but we should like, as early as possible, to have the *names* of all who will, in all probability, be subscribers next year. Those who prefer to save trouble and send their subscriptions with their names, can send either the $1 or $1 50, as they prefer. Fractions of a dollar can be remitted in stamps, or the new postage currency.

In case of an advance in price, we will send the paper for eight months to those remitting $1, and for twelve months to those sending $1.50. If no advance is made, they will receive it for twelve and eighteen months respectively.

It is to the best interest of our magazine, and the interest of horticulture generally, that we continue at $1, as it gives us the great circulation which makes our advertisers use our columns so freely as they do; and we shall very much regret if we have to raise the price to even so small a figure as $1.50. We, therefore, hope our friends will do their best to send us as many names as possible before the first of the year.

If, by the exertions of our friends, our subscription list is maintained at its *present standard, we shall not increase the price.* Our only aim is to continue its publication without actual loss.

PROTECTING RASPBERRIES AND OTHER PLANTS THROUGH WINTER.

The fact does not seem so well appreciated as it should be, that plants apparently hardy, and which will really live through the winter, yet often suffer material injury,—and that it is better, therefore, to protect in some degree many things usually left to get through the winter in the best way they can.

This is particularly true of the Raspberry. It is placed to the credit of some kinds that they are "perfectly hardy;" but it is now known that even the hardiest are often killed in the most unaccountable way, and that no kinds are uniformly safe unless protected. The year before last the writer saw a lot of Raspberries that had lived through the winter, entirely unprotected, bearing the most abundant crop. The last year they were all killed to the ground, though treated exactly in the same way as before, and though the winter was easier on most kinds of vegetation than that of the previous year. The only explanation is, that the canes had in some way become enfeebled, and less able to resist cold than before. What caused this enfeebling does not matter for our purpose: which is to show that hardiness does not altogether depend on positive character, but is influenced by many outside circumstances, which we can in no way guard against so well as by slight protection.

Of all means of protection to low growing things, the earth affords the very best; the slightest covering, if not in too wet a place, having been found far more effectual than heavy wrappings of other protective material above ground.

The only objection we ever heard was that it is "too much trouble" to protect so many things in this way; but it is astonishing how much may be done by a handy man in one day. In the Raspberry, grown in rows, a good plan is to get a stout peg, and, grasping a handful of canes, catch them under the crotch of the peg, and press the peg in the ground so far as it will go in without danger of breaking the canes. Then, while the peg holds the branches down, with the spade cover the canes with soil, banking the covered soil so as to form a ridge. Then draw out the peg, seize another handful of canes, peg down, cover, and so on as before.

This is easily understood, but to make it clearer we give the annexed sketch:

For this mode of protection, not only the raspberry but the grape-vine, fig, rose, and all those plants that flower on the young shoots of the next season's growth, are certainly adapted, and may be successfully carried through winter without injury in this way. For apples, plums, peaches, and such things as form their flower-buds on the wood of the previous season's growth, it is not so certain, as there is some danger of the delicate buds rotting in winter. Last spring we spoke of this, and suggested that experiments be made with the peach; and, in reference to this fruit Mr. Weed has some notes in the present number. He found just this difficulty; the buds rotted in winter. The writer of this article tried a few peach trees last winter, and found the same objection. Towards spring, as soon as the temperature began to rise above the freezing point, the buds commenced swelling; the result was most of them failed to perfect themselves. A few however got through well, and have given handsome fruit. That some of them have matured, shows that it can be done, and it only requires a little experimenting to find out the exact conditions. These, doubtless, are a perfectly uniform low temperature that will not excite vitality too early; and a moderately dry soil that will not encourage decay. We have no doubt much may be done with even this class of fruits, and we hope it will find extensive experimentors.

Much may be done to preserve trees from injury that are not capable of being bent down and covered with soil. There is a strong suspicion fixing itself on the minds of cultivators, that yellows and curl in peach trees, and other diseases in other fruits, have some connection with injury from extreme cold in winter,—a cold which injures, but does not kill outright. Hence a protection that will give even but a few degrees more of warmth, will often be the means of favoring health and adding materially to the crop. Cold winds dry out the sap of a frozen branch severely, and an afternoon sun on a frozen branch has precisely the same effect. It should, therefore, be considered an essential protection to every orchard that it has a belt of evergreens planted on the side exposed to cold winds or the suns of a late winter or early spring afternoon.

Those who have command of time may, in some instances, train trees so as to be easily protected by boards, branches or mats. This is a very pleasing and pleasant occupation, and we are very much surprised that it is not oftener done. This season we saw a small apricot tree, on which a few hours had been spent to secure it from the curculio,—the tree having been trained flat against a wall to facilitate the plan. It had two hundred magnificent fruit on it,—no great crop, after all; but considerable considering it was the first result of a little experiment. But not an experiment either: it was

too simple for this,—it was mere labor alone, and trifling at that.

It is a great mistake to suppose that dwarf trained trees produce nothing. In a tree suffered to grow as it will, the fruit is usually around the terminal branches only, and the mass of space through the main branches bear very little worth speaking of; but in a tree skillfully trained, every part is made to bear its full proportion of fruit,—no space is lost. We have seen two bushels of apples on a five year old trained dwarf, and probably as many fruit on an espalier pear tree, the branches of which extended not more than fifteen feet in a straight line, and the topmost line of branches was not more than six feet from the ground.

We touch upon this question of training here because it is one intimately connected with the one of protection. It requires judgment, and skill, and time, and labor; but all this is one of the necessary requirements of the art of gardening, and it is generally those who ignore these essentials who "have no luck," and believe fruit-growing "to be a humbug," and "will not pay."

TEMPERATURE OF THE EARTH UNDER SOD AND UNDER CULTIVATED SURFACE.

The writer was recently a listener to an animated discussion between two excellent gardeners. One insisted that the earth was drier and warmer under sod than under loose earth. The other argued on the contrary. Each was sure the other was wrong, and each appealed to us. "There is a thermometer," we replied, "why do you not go and try for yourselves?"

How strange it is that men will argue for years on the most simple questions, when but five minutes of actual experiment would often decide the matter at once and forever! How true it is that a large amount of misunderstanding, often leading to the most disastrous issues, not only to individuals, but to whole communities, arises from imagination being mistaken for fact, and hasty assumption misplacing cool perception. In our schools most of what we are taught might come under the head of "what to remember;" but how much better would it not be if the system was "how to observe and consider?" We cannot help making these reflections, as, in our department of education,—horticulture,—we find this injudicious course of education opposing our progress at every step. But to the temperature experiment.

It was mid-day on the 26th of August, and the thermometer, in the shade, under a tree, six feet from the ground, was 92°.

The first spot selected was in a very hot place, on a lawn, where the grass was kept mowed pretty close by a scythe. A spit was dug up by a spade six inches deep, the thermometer inserted, and the sod placed on immediately. After a few minutes, the thermometer was found to mark 88°. Ten feet from this spot, in the same full sunny exposure, was a flower-bed, kept clean by hoe and rake. The thermometer was here inserted as before, and found to be 96°.

A more exposed place was then chosen, on a hill, where a boundary fence divided a pasture from a cultivated piece of ground, used as a nursery, on which three-year-old apple trees were growing. Four feet from the fence, in the sod, the thermometer was again tried as before, and the result was 80°. The same distance in the cultivated lot, tried in the same way, gave 88°.

It was evident, from these two experiments, tried in the coolest and in the warmest spots that could be found, that the relative difference in the temperature was uniform, and the result is, that on a hot summer's day, the earth, six inches under the surface in sod, was eight degrees cooler than under a clean, loose surface.

It seems to us that this fact, if found to be universally as it was in this particular instance, ought to have an important bearing on the discussion of many important horticultural questions,—such as whether orchards, as a rule, are better in grass or not, for instance,—but it is not our object here to enter into such questions. We wish now merely to call attention to the want of more observations and less opinions, and to show the result of such an experiment in a single instance.

Scraps and Queries.

☞Communications for this department must reach the Editor on or before the 10th of the month.

☞The Editor cannot answer letters for this department privately.

Botanical Work—*J. M. S., Potosi, Mo.* writes:

"I would like to possess a Flora of the Southern States, (for I still claim them as States of the old Union,) and of the region west of the Mississippi. I find many plants here not in the 'Northern States east of the Mississippi'—the district of Gray's Manual. I can readily tell their families, and generally their genera, but cannot go further, unless I

happen to hit *Latinizing* some peculiarity; and here let me state that the specific name should *always* be characteristic, and not so called in honor of some person. Personal names do very well as generic names, and are very proper; but does not, for instance, Dupontia Cooleyi sound much more awkward than Dupontia palustris, which would be characteristic?"

[You should add "Chapman's Southern Flora" to your library, by all means.

Most botanists prefer names that mean nothing. Were every plant in the vegetable kingdom known at the time of naming any one species, it would be easy to name a plant after some relative peculiarity; but new plants are constantly being found. Dupontia Cooleyi usually grows on the margin of swamps; therefore our friend would have it called *palustris;* but should another Dupontia be yet discovered growing in a similar spot, and the learner go by the name in tracing his plant, he would be very liable to get into trouble. This annoyance already exists. We have lineatus, hirsutas. longifolias, and so on, and plants more hairy, longer and narrower having afterwards been found, the practice has become a nuisance.]

Moonlight Planting.—*P. A.* asks:

"Do trees sleep in the night? A friend says he planted trees in the night with perfect success, while the ones that he planted in the day died, more or less. He thinks that the proper time to move large trees is when they are asleep. Perhaps some of your readers have had experience in the matter."

[When trees die after planting, it is usually because the sap dries out before the injured roots can make good the loss If we take up a tree and lay it *on* the ground, it soon dries up; that is, all the sap evaporates, and it can get no more. If the tree is set *in* the ground, it evaporates just as much as in the other case, but the roots in the ground make good the loss at once. In the daytime a tree loses by evaporation more than it loses at night. Hence it is quite possible that a tree, planted in the morning and exposed to a hot, dry air all day afterwards, would have a worse chance than one planted in the evening of the same day, especially if that night or the next day should be moist or damp. On the other hand, if the day of planting should be damp, and the next night or day dry, the advantage would be with the day trees.

It is plain, from these facts, that it is quite possible for one to "plant in the day and have them all die, and plant others "at night and have them all live;" yet the success, or otherwise, has no reference to night or day as such, but is entirely a question of evaporation.

Dig a tree up with plenty of fibrous roots. Do not let them dry, or let the stems or branches dry till planted. Crush the soil fine, so that the roots can soon touch and draw water from it, and do not let the top draw too much moisture till the roots are ready with their supply, and, night or day "nearly all" the trees won't die.]

Names of Plants, &c.—*A. W. C.*—My shrub which I call Euonymus *latifolius* is now in fruit, and I think very fine. I send a branch. If thee knows the name to be wrong, please give the true name.

[Correctly named.]

The pears I have for Belle Lucratif, are they true? and if not, what are they? The tree is distant from the dwelling, and I have hitherto failed to keep them on the tree until ripe, or I would not send unripe fruit.

[Belle Lucratif is very variable. This is an extreme form, but it is, undoubtedly, correct.]

Pine Sawdust—*A. J., Hanover Furnace, N. J.*—Will you, or one of your many intelligent practical correspondents, please tell me if the sawdust of Yellow Pine and White Cedar can be made available as a fertilizer? and if so, the best mode of previous treatment and application?

Nectarines from an Orchard House—*Isaac Pullen, Hightstown, N. J.*—I send you herewith six varieties of Nectarines (viz: New White, Elruge, Downton, Early Newington, Pitmaston Orange, and Hardwicke Seedling); also one specimen of Old Mixon Free Peach. These Nectarines are not as good specimens as some grown earlier in the season, but they will serve as a sample of what can be grown in an orchard house without artificial heat. Next year I intend to force them.

[Creditable specimens, and encouraging for orchard house advocates.]

Errata.—In Dr. Jack's article on Window-gardening in August, on page 231, second column, read: "The family represent the fishes," &c., instead of "The ferns represent the fishes."

Communications from several friends are laid over till next month.

Books, Catalogues, &c.

Dr. C. W. Grant, Iona, N. Y. "Landmarks," with circulars of Grape-vines. Dr. Grant has been one of the most liberal of nurserymen in circulating gratuitous information in his large catalogues, which must have proved a heavy expense to him. It is not surprising, therefore, that he should feel that information sought for is worth paying for. The "Landmarks" will be issued periodically, at $1 per year, and, we have no doubt, will be a successful idea.

H. A. Dreer, Philadelphia. Bulbous Flower Roots.

T. C. Maxwell & Co., Geneva, N. Y. Wholesale List.

John Rutter, West Chester, Pa. Descriptive List.

J. L. Darlington & Co., West Chester, Pa. Wholesale List.

Bronson, Merrill & Hammond, Geneva, N. Y. Wholesale List.

William Ramsden & Co., Dansville, N. Y. Wholesale List.

W. H. Daughaday, Newburg, N. Y. Grapes.

A. S. Fuller, Brooklyn, N. Y. *The Illustrated Strawberry Culturist.* A very useful tract, indeed. Published on the same principle as Dr. Grant's *Landmarks*, and worth every one's reading.

J. Knox, Pittsburg, Pa. Small Fruits.

J. M. Thorburn & Co., New York. Bulbs and Flowering Roots, with Directions for their Management. 24 pages.

C. W. Cutting, Detroit, Michigan. Fruits.

W. R. Prince & Co., Flushing, N. Y. Small Fruits.

D. Eagle, Marietta, Pa. Wholesale List.

A. C. & G. T. Fish, Rochester, N. Y. Small Fruits.

Andrew Bridgeman, New York. Bulbs, &c.; with Directions for Treatment, &c.

New or Rare Plants.

Hybrid Leptosiphons.—We observe that our French friends have succeeded in raising Hybrid Leptosiphons, and, to judge from a drawing by Riocreux in the last number of the *Revue Horticole*, with striking success. This admirable artist represents four sorts, one golden yellow, a second, rose-colored with a yellow eye, a third scarlet with a yellow eye, and a fourth purple with a yellow eye. All these, produced by crossing *Leptosiphon androsaceus* and *L. luteus*, are said to have fixed habits, reproducing themselves by seed. The operation has been conducted by M. Oelkern, chief gardener to the house of Vilmorin & Co. The *Revue* states that the seeds are sown in September, kept in a cold frame through the winter, and planted out in April. At the end of May they are in full flower. But this is in the neighborhood of Paris.

Anthurium Scherzerianum.—This plant was mentioned in your report of the Royal Horticultural Society's Exhibition a short time back by Mr. Beaton, since which no one seems to have taken any notice of it. It was exhibited by Mr. Wendland, gardener to the King of Hanover, and was brought by him from Costa Rica, where he says it was one of the loveliest things he saw. And as I, like all the world, have been up to London this summer to see the sights and scamper through the gardens round it, I stumbled upon it among many and many a grand thing when going round the Botanic Gardens at Kew, where I had a better opportunity of looking at and examining it than I had at Kensington; a brief description, therefore, may not be uninteresting.

It belongs to the natural order of Arads, a class of plants which have given us some of our finest ornamental foliage, but the flowers of which, as a rule, are the most insignificant; but this plant will, I think, become a favorite with every one, and be welcomed by every one that has a stove, be its dimensions ever so small; for, being naturally a diminutive grower, it is not likely to get too large for any. The leaves rise upon a slender petiole, are lanceolate in shape, of a sombre green color and leathery texture, with a light colored midrib, above which stand the flowers, composed of spathe and spadix of a most brilliant scarlet color. The spathe is about 1½ inch long, of an oval form; the spadix stands straight up above it, and is about 2 inches long, and of the same beautiful color.

Mr. Wendland says it is a very free bloomer, and continues in flower some four and five months. I shall be among the first to add it to my collection so soon as it is to be purchased.—Juvenis in *London Cottage Gardener.*

Rare and New Fruits.

The Rebecca Apple.—Specimens from Mr. E. Tatnall, Wilmington, Del., somewhat resembling the Maiden's Blush; but the red deeper, the flesh darker and less subacid; probably, also earlier. When received we thought it equal to Maiden's Blush, at least in quality. Three weeks after we sent the specimen to the Horticultural Society of Pennsylvania, whose report will be found in our next issue.

The Fourth of July Apple.—For two or three weeks past our market has been supplied with a very handsome, showy apple bearing this name.

About twenty years ago Mr. Jæger of this city imported a tree of this variety from Cassel, Germany, where it was growing in his brother's garden. When it produced fruit, specimens were found nicely colored and nearly or quite ripe on the 4th of July, for which reason he called it the "Fourth of July Apple."

Several years ago it was introduced into the Columbus nursery under this name, and has thus been disseminated quite largely.

The tree is a handsome, vigorous, upright grower, leaves and blossoms very large. It is also very hardy. The memorable winter of 1855 and 1856, which injured and killed so many trees throughout the country, appeared not to affect this in the least, though other varieties growing beside it were destroyed.

The fruit is above medium, roundish oblate, pale yellow, nearly white in the shade, with distinct stripes of red in the sun, and covered with a delicate white bloom. Flesh yellowish, tender, juicy, quite acid, of good, though not first-rate flavor. It is a fine kitchen apple, cooking very tender, its brisk acid, when properly tempered with sugar, making a very agreeable sauce.

It is an early bearer, and productive, ripens a little before the Early Harvest, and for several weeks thereafter. Valuable for family use, and profitable for market—$20 have been received for a season's crop from a single tree.

Columbus, Ohio, July 25, 1862. A. G. HANFORD.

[Accompanying this communication was a box of handsome specimens of the apple. The color is much like that of the Duchess of Oldenburgh, the form quite different, all these specimens being somewhat conical, in addition to the oblate form. The flavor is only "good;" on tasting side by side with Carolina Red June and Red Astrachan, they were not quite equal to the latter, and considerably inferior to the former. But their handsome, fair appearance and early maturity, added to the reported hardiness and productiveness of the tree, must render this a valuable sort for market and summer stewing, especially for the west. Our correspondent informs us that "it was thought for a time that this and the Telofsky would prove identical—they are now growing side by side in the nursery rows, and have the same upright growth, and very large foliage. But the wood of the Fourth of July is darker, the foliage broader, and of a darker, duller green, and shoots rather stouter."—*Country Gentleman.*

Domestic Intelligence.

Grapes in Kansas.—For the grape, Kansas, or a portion of it, is peculiarly fitted. Our soil is light and rich, and our climate dry—we do not need to drain or manure our land. Along the bluffs of the Missouri, in the counties of Doniphan, Atchison, Leavenworth and Wyandotte, and along the bluffs of the Kaw, in the counties of Johnston, Douglass, Shawnee, Waubonsee, &c., are thousands of acres of cheap land, unequalled, I believe, in the world for the culture of the grape. My own preference is for the bluffs of Missouri, where I have an incipient vineyard. There are several vineyards started in Doniphan and Leavenworth counties, and have surpassed the expectations of their owners in the rapidity of their growth, the excellence and productiveness of their fruit, and their freedom from disease. One of the owners, an old French *vigneron*, tells me he never saw vines do so well in France. He is an intelligent and educated man.

Good land may be purchased in these counties at prices ranging from two to twenty dollars per acre, according to its nearness to some embryo city; and cultivated land from five to twenty-five dollars per acre, according to improvements or nearness to the cities aforesaid.

St. Joseph and Leavenworth City furnish a ready market for all grapes, and St. Louis for all wine or grape juice that this section of the country can yield for several years to come.—*Cor. of Country Gentleman.*

Reducing and Applying Bones.—James S. Grennell, of Greenfield, Massachusetts, has sent to the office of the *Country Gentleman* a sample of

bones, which had been softened and rendered fit for immediate application in the following simple way. Mr. Grennell says:

"I set an old cask with one head in some convenient spot back of the house, in the spring, and of the bones which have accumulated during the winter I throw in enough to cover the bottom; then enough of unleached ashes thoroughly to cover them; then another layer of bones, then ashes, and so in alternate layers until the cask is full. On top is placed a sufficient covering of ashes, loam, or charcoal dust, to prevent the escape of any gas. I usually wet down the ashes as I proceed, and leave the cask exposed to the weather, that they may be kept damp. By the next spring, when I wish to use them, the bones are thoroughly digested and in a fit condition to use."

Black Knot on Plum and Cherry Trees.—We have repeatedly examined the fresh excrescences with the best microscopes, without discovering the least indication of any insect. If the curculio were present in ninety-nine cases out of a hundred, yet if it were shown conclusively that it is absent in the hundredth, it is hard to conceive how it should cause the excrescence in this hundredth case.—*Country Gentleman.*

The Zouave Petunia, one of the most popular new Petunias, was raised by Mr. John Wilson, of Albany, son of the raiser of the Albany Seedling Strawberry. Mr. Wilson is now Major of one of the New York regiments now in service.

Gathering and Storing Fruit.—All fruit should be carefully gathered by hand. Shaking and pounding the tree is not only an injury to the fruit, but also to the tree.

Summer and Fall fruits must be very carefully handled and marketed as soon as possible after they are gathered. The barrels or packages should be perfectly clean and packed as full as possible, tightly headed, that the fruit may be kept in its place while in transitu.

Winter fruit may be left in a cool, dry room, in shallow heaps, for a week or two, to throw off the sweat or surplus moisture, after which it should be assorted and packed in clean, dry barrels, (if for shipping), the barrels well filled, and the heads tightly pressed in upon the fruit and headed up. If for home consumption, or long keeping for spring or summer market, it may be packed in barrels as for shipping, and left as long as frost will admit in an out-building, but when there is danger of freezing, it should be stored in a cool, dry cellar. Or, instead of packing in barrels, it may be taken immediately to a dry, airy cellar, laid upon shelves or traps in layers two to four deep, the shelves being in tiers, one above the other. This latter arrangement affords a good opportunity for examining the fruit during the winter, and of removing decaying specimens. When placed on shelves as above, the cellar windows should be raised in mild, dry weather, for the admission of fresh air.

Apples for Wisconsin.—No. 1.—Extra hardy list of good varieties in use from July to spring found successful in the valleys and undrained soils, if well ridged with the plough.

1. Red Astrachan,
2. Fall Stripe,
3. Sweet Pear,
4. Fall Wine Sap,
5. Sweet Wine,
6. Canada Black,
7. Talman Sweet,
8. Perry Russet,
9. Eng. Golden Russet,
10. Red Romanite.

No. 2.—Hardy list of excellent varieties, in addition to No. 1, of early and long keepers, for elevated well drained locations, of any aspect, and for rich soils.

11. Sweet June,
12. Summer Golden Sweet,
13. Early Pennock,
14. Duchess of Oldenburg,
15. Sops of Wine,
16. St. Lawrence,
17. Aut. Strawberry,
18. Benoni,
19. Snow,
20. Colvert,
21. Bailey Sweet,
22. Cider,
23. W. Seek no Further,
24. Vandevere,
25. Yellow Bellflower,
26. Pomme Grise,
27. Winter Wine Sap,
28. Northern Spy,
29. Willow Twig,
30. Rawle's Janet.

[*Wisconsin Fruit-growers' Report.*

Experiments in Strawberry Culture.—Observing an article of S. L. Frey in the *Country Gentleman*, page 30, on the unproductiveness of Wilson's Albany, reminds me of similar failures of high cultivation that have come under my observation, and goes to confirm the opinion that the same variety of strawberry in different climates, soils and locations, requires different treatment. And every successful cultivator, after examining the experience of others,—nowhere to be found more fully recorded than in the *Country Gentleman*,—must, by careful experiment, ascertain what varieties and kinds of treatment are best adapted to his situation.

In the fall of 1860, the writer of this took a trip among the large strawberry plantations in Maryland—many of them from eighty to one hundred

acres in extent, and from which the great bulk of early strawberries are gathered for Philadelphia,—one farmer having received for his crop $10,000, being an average of $100 per acre. And I am informed the same person has the present season sent 125,000 quarts at an average of six cents per quart, amounting to $7500, giving employment to one hundred and fifty pickers.

The three principal kinds there grown are called Scarlet, Hart, and Stewart, and succeed better on a large scale, without much care, than any of the more noted varieties, such as Hovey, Albany, and others, highly esteemed elsewhere. Wishing to try those three varieties here, a few plants of each were obtained and planted in a single row, hills about two feet apart, on rich land made deep and mellow, and manure applied plentifully without measure. During the summer of 1861 they made a vigorous growth; the runners were all cut before taking root, and during last winter all covered with manure. This summer the plants made a remarkable growth, so that a bushel measure would not cover a hill without resting on the foliage. There was an abundance of fruit-stalks and blossoms,—all hermaphrodites,—but an entire failure of fruit. Little imperfect berries, not larger than peas, was the result, although a very favorable season for producing a large crop of fruit grown in beds as usual.

Other experiments have proven that with hill culture thirty inches apart, and the ground thoroughly mellowed between the hills last summer with Mape's Subsoil Plough, runners cut off, plenty of manure, and mulched with leaves, that some varieties, such as Triomphe de Gand and Trollope's Victoria, did remarkably fine; the Lady Finger and Diadem far surpassed any thing ever obtained by cultivation in beds; the Albany, Scarlet Magnate, Peabody and Hooker were no better than by ordinary bed culture, where each plant is allowed about six inches of space; and the Hovey was an entire failure, about two acres of which that were well tilled in hills last year and runners cut short, were ploughed under this season before fruiting time as valueless; while Hoveys, grown in beds as usual in their natural way, produced a fine crop, much better than for several years past.

Such has been the result here, causing doubts as to the propriety of adopting hill culture indiscriminately with all varieties, and having set out ten acres last spring, mostly thirty inches apart, with the intention of keeping them in hills without runners, we shall, after subsoiling the ground thoroughly between them, turn two rows together, forming beds about three feet wide, with alleys between, which plan has heretofore yielded us over two hundred bushels per acre, and it may be advisable to let well enough alone.

William Parry.

[We extract the above entire from the *Country Gentleman*, as it confirms what we have so repeatedly contended for, that there so many local circumstances affecting varieties of the strawberry, that it is almost impossible, without trial, to recommend a variety suited to every case.—Ed. G. M.]

Cultivating Orchards.—Our valued contemporary, the *Country Gentleman*, says we have quite misunderstood it in some remarks we recently made. What it said of neglected culture and but two inches of annual growth, it remarks, applied to but young trees newly set out. Our "management it commended as better than nine-tenths of orchards received."

Our understanding certainly was, that the object of the article in the *Country Gentleman* was to differ from the views we advanced. If, in that article, our contemporary combatted doctrines we never held, it was but a natural inference that it supposed we held them.

With the explanation now made, we think neither journal differs materially; for, assuredly, if a tree did not grow, through grass growing around it, we would keep it clear or cultivated until it did. Our objection to cultivation is that it *usually* tends to *too much* growth for the full health and long-continued fruitfulness of the tree. When trees are so poor that not even top-dressings will make them grow; or so newly set out that long, rank grass absorbs the moisture the tree roots ought to have, they constitute the exceptions that always require another rule.

Large Wild Grape Vine in Missouri.—An army correspondent in southwestern Missouri describes an enormous wild grape vine found in the White river:

"The wild grape is very abundant here, showing the natural adaptation of this region for vineyards. At one place we found an immense grape vine reaching from the ground some thirty feet to the branches of a tall tree, and having been cut by some of the passing soldiers, it was bleeding its sap away in so rapid a manner as to make a pool at its roots. Some of us held our cups and caught a draught of the flowing sap, which tasted like pure water, with a slight astringent effect upon the mouth. It was not an unpleasant drink. The

grape vine would probably measure eighteen inches or two feet in circumference."

PRICES OF FRUIT IN THE SAN FRANCISCO MARKET, JUNE 20TH, 1862.—

Apples, - - - - - -	per lb. 20a25
" cooking, - - - - - -	10
Strawberries, - - - -	per lb. 20a25
Raspberries, - - - - - - -	75
Gooseberries, - - - - - -	10a15
Currants, - - - - - -	50a1 00
Blackberries, - - - - - - -	25
Cherries, - - - - - - -	50a60
Limes, - - - - - -	per doz. 37
Oranges, - - - - - - -	75
Malaga Lemons, - - - -	1 25
Pine Apples, - - - - -	each, 1 00
Bananas, - - - - - -	4a12
"	per bunch, 1 50 a 5 00
Almonds, - - - - -	per lb. 25
Peanuts, - - - - - - -	25
Filberts, - - - - - - -	15
English Walnuts, - - - - -	12
Pie Melon, - - - - - -	50
Watermelons, - - - -	each, 75

[*California Farmer.*

CULTIVATING ORCHARDS.—One of the best apple orchards that we have seen in Western New York is cultivated with hoed crops, and the ground is kept as clean and mellow as a summer fallow. There are many good apple orchards, which, after the trees begin to occupy and shade the ground, are allowed to lie in grass. It is more convenient. But we never heard the idea advanced that the trees were any *better* or more productive for this treatment.—*Genesee Farmer.*

PREMIUM FOR WEEDS.—The Committee on "Pernicious Plants and Weeds," in the Agriculture of Chester County, report, that *four* collections of such plants were produced at the exhibition,—which evinced a commendable attention to that interesting subject.

Two of the collections were arranged in groups of *Natural Families*, and affixed in convenient columns, with the proper *names* of the plants attached.

To the collection numbered 154, (prepared by Thomas A. Jackson,) containing 198 specimens, the first premium, a silver-plated cream pitcher, was awarded.

To the collection numbered 2, (prepared by Stephen P. Sharpless,) containing 126 specimens, neatly arranged in two handsome volumes, the second premium, a copy of the *Country Gentleman* for 1861, was awarded.

Two other collections, of unarranged weeds, were exhibited:—one, by Rachel Taylor, comprising 108 specimens; and the other, by J. Williams Thorn, containing 32 specimens. To each of these a special premium of a copy of the *Farmer and Gardener* for one year was awarded.

This is believed to be the first instance of an exhibition in this county where *weeds* have attained to the importance of an official notice.

Weeds may be defined to be plants of spontaneous growth, which are either *pernicious* (*i.e.*, poisonous in their properties, injurious by reason of thorns or prickles, or choking out useful plants by exuberant growth) or merely *worthless*, in agriculture, as cumberers of the ground. Every good, tidy farmer is careful to eradicate such plants, or to keep them in due subjection. Of course, his first step in the process is to learn to *know* them when he sees them. He cannot satisfactorily talk or write about them without employing *names;* and every intelligent person should be able to use appropriate and approved terms when treating of objects. Specimens of all vegetables concerned in agriculture and horticulture (*weeds*, as well as *useful* plants) should be neatly prepared, arranged in natural groups, and kept in convenient indexed volumes in the Library of the Society, for the use of the members. In that way the volumes could be consulted and the plants become known with the same facility as words are learned in a dictionary.

All of which is respectfully submitted by

WILLIAM DARLINGTON,
JOSHUA HOOPES,
HALLIDAY JACKSON,
} Committee.

[*West Chester Ag. Soc.*

Foreign Intelligence.

DEATH OF MR. TWEEDIE.—We learn from the *Weekly Standard* of Buenos Ayres, that Mr. John Tweedie died in that city on the 1st of last April, in his 80th year. From the notes of the editor we borrow a few biographical extracts. The deceased was a native of Lanarkshire, and his profession that of a landscape-gardener. At an early stage he became foreman in Dalkeith Gardens, and subsequently in the Botanical Garden, Edinburgh. In both these he had opportunities of seeing and acting, under the ablest superintendence. About the close of the last century, a new garden and plea-

sure-grounds were to be formed at Castle Hill, in the vicinity of Ayr, and Tweedie was selected for the purpose. Here he had an arduous struggle with an ungenial soil and bleak climate; but the munificence of the proprietor and the skill and perseverance of the young gardener prevailed. His success at Castle Hill next recommended him to the proprietor of the adjoining estate of Sundrum, where he was employed for some seven years in remodelling and extending the garden and pleasure-grounds of the venerable and princely mansion. His mission at Sundrum fulfilled, he removed to Blairquhan Castle, the property of the late Sir David Hunter Blair. About six years sufficed to put the garden and pleasure-grounds in working order. His next and last appointment in Scotland was that of gardener at Eglinton Castle during the minority of the late Earl. He had now attained the mature age of fifty, when most men would have settled down to enjoy the quiet of declining life. But Tweedie had heard of the botanical riches of South America, and felt attracted towards them by some influence that was irresistible. In consequence, he abandoned his snug retreat at Eglinton Castle, and in 1825 arrived at Buenos Ayres. During a residence of thirty-seven years he prosecuted his professional avocations, so long as health and strength permitted, with enthusiastic zeal and perseverance. Of his taste as a landscape-gardener, Santa Catalina, in the vicinity of this capital, is still a noble monument after all the vicissitudes of a long revolutionary period. Its gorgeous plantations, that in Great Britain would have required centuries of careful cultivation, show the capabilities of our soil and climate. Latterly his attention was chiefly directed to the botanical productions of the Republics of the Plate and of the Empire of Brazil. In quest of these, his peregrinations, at his own risk and cost, extended from Bahia Blanca in the south to Tucuman in the north, embracing the coasts of the Plate, the Paranâ, the Uruguay, the Rio Negro, &c., and that of the Atlantic as far north as Rio Janeiro. With what success he fulfilled this arduous mission may be seen in the botanical records of the United Kingdom, and inferred from the active correspondence maintained for many years with Bonpland, Sir William Hooker, Dr. Gillies of Mendoza, Dr. Gordon of Cordoba, and other names distinguished in these departments of natural science.

The subject of this notice being the person to whom we are indebted for the origin of the now numerous varieties of the Verbena, which add so much to the beauty of our flower-gardens and parterres, as well as the introducer of many other valuable plants to British collections, deserves more than a passing notice in a journal devoted to horticultural and agricultural matters.

The first of the showy Verbenas which appeared after V. chamædrifolia, was raised at the Botanic Garden, Glasnevin, by Mr. Niven, from seeds received from Mr. Tweedie, and named, in honor of the latter, Verbena Tweediana. Soon after the fine white species, Verbena teucrioides, appeared through the same source. From mixing these species with V. chamædrifolia and V. pulchella, the present breed originated. The very useful and beautiful Franciscea latifolia was flowered from plants raised from seeds sent to Glasnevin by Mr. Tweedie in 1840. Soon after Mandevilla suaveolens appeared, and was named after the British Consul at Buenos Ayres, the Hon. Mr. Mandeville. In 1841 the seeds from which the Pampas Grass was first raised were sent to Glasnevin by Mr. Tweedie; one of the finest plants is named Bignonia Tweediana. Another beautiful plant from the mountains of Rio Grande, namely, Calliandra Tweedii, *Bentham*, was raised at Glasnevin in 1843, and is now in flower there with many hundreds of its bright scarlet showy flowers. Mr. Tweedie also sent large numbers of Cacti to Britain, some of which have, from time to time, appeared in periodical works, and others remain still in our collections undescribed.

Journals of some of the principal excursions made by Mr. Tweedie in South Brazil have been published by Sir W. Hooker in the "Journal of Botany" and "Annals of Natural History." Besides, the "Contributions towards a Flora of South America and the Islands of the Pacific," by Hooker and Arnott, published in those works, will show how largely those gentlemen were indebted to Mr. Tweedie for data to work on.

The following extracts from his letters will afford sufficient proof of some of the hardships he had to encounter on his botanizing excursions. In one, bearing date July 22, 1840, he writes:—"I have met with more uphill work here than you who live in the midst of civilization can believe. In the first place, I live in a flat, monotonous country, where I must go 500 or 600 miles before I meet with either diversity of soil or of elevation, through nothing but a vast plain of grass and thistles. In one of my journeys to the Cordilleras of Tucuman, though only 1200 miles, it took us six months' constant travelling to accomplish it. Sometimes we made little more than three miles a day. This, you will say, affords good time for collecting. But

what is to be collected in those grassy plains?

"In another voyage, by water, up the Uruguay a little more than 300 miles, it took us six weeks, in consequence of calms and currents. Again, in one up the Parana, I was shipwrecked in a pampiera gale, when mid-day became as black and dark as if it were midnight, 400 miles up the river." "I next left Buenos Ayres for Patagonia, in a small vessel, with only five days' provisions on board. During the third night we grounded on a sand bank near Cape St. Antonio, when, with another passenger, I left the ship to try and make our way overland; but after travelling two days, we could not find our way out of coarse, grassy plains and salt marshes, and had again to return to the vessel on the third day, after being all that time without food or fresh water. After throwing half the cargo overboard, we got off and stood out to sea, only to suffer greater privations, for out of the five days' provisions we had to live nineteen days, when we arrived at Bahia Blanco, where there is only hard, brackish water, the partaking of which laid the foundation of a distemper in me I shall never get rid of. I shall only mention another unfortunate voyage to Rio Grande, where I was anxious to be, in order to commence botanizing at the season I had left three years before, that being one of the finest countries for variety in its vegetation that I have yet seen. We were shipwrecked off Monte Video, where the brigantine was knocked to pieces, and I was saved by clinging to the rigging."

Such mishaps as these did not extinguish the ardor of Mr. Tweedie, who, after he had passed the three-score and ten years, undertook a second journey from Buenos Ayres to Patagonia, and was again nearly starved to death. In his account of this journey he mentions being accompanied by a fellow-traveller, when they were prevented from prosecuting their journey in consequence of the unusually swollen state of the rivers they had to cross at that period of the year. The stock of provisions became exhausted, and starvation seemed inevitable, when, at a great distance across the level plain, some dark object became perceptible, which they thought might be some travelling party. On their closer approach, they were surprised to find the objects were trees, and a species of Pinus, on the seeds of which they existed until the rivers fell and they became enabled to pursue their journey. Two of the cones of one of these trees were sent to Glasnevin, and the plants raised from them proved to be a slight variety of the Stone Pine, Pinus pinea. Mr. Tweedie states that the trees were low, but spread over a large surface of ground horizontally; and, singular enough, the young plants retain the same habit, which seems the only difference between them and the ordinary state of the species. —*London Gardener's Chronicle.*

The White Doyenne Pear in France. — It is remarkable that the French should have this variety subject to the same cracking diseases as we. M. Langoulet says, in the *Revue Horticole*, that old pear fanciers, like himself, remember that formerly it was "only necessary to buy, at a very low price, a Doyenne Pear, transplant it badly, and abandon it to the generosity of the climate, in order to gather annually a harvest of fruit, so perfect in tint, so melting, so juicy, so delicately perfumed, that our best modern varieties leave to the old "pear-tasters" *(degustateurs)* something to regret.

Fruit, he says, does not degenerate. Science has decided this; but, owing to some alteration, either culture or in some of the various conditions which affect the well-being of the tree, an *alteration* has occurred in the fruit, and now, in place of the old Doyenne, we eat a few small, rough, stunted, cracked, worm-eaten, and coarse-grained, with the consoling conviction that it is the tree which has degenerated, and not the fruit. The principle is saved, but the reality is sad.

The Effect of Dew and Fog upon Plants is the subject of an elaborate paper by M. Duchartre in the *Annales des Sciences Naturelles.* He gives the results of numerous experiments upon plants of very diverse kinds and under very diverse conditions, the results of which he finds to be of a uniform character. He expresses his conviction that plants do not absorb the dew condensed on their surface, as stated by Hales, and generally believed; and that the dew does not exercise a direct influence on vegetation, but the water deposited on the surface of plants by nocturnal radiation suppresses transpiration in them, and, in some cases, produces the beneficial effect of a small local rain through the absorption of the earth upon which it falls from the plant. He does not attribute much influence on vegetation to fogs in temperate regions, but thinks that they may be important in intertropical mountainous regions. Physiological botanists will be greatly interested in the details of the experiments.

Camellias.—These fine plants flourish best in a compost of equal parts of turfy loam and peat, with a sprinkling of sharp sand. The soils not sifted,

but broken, and a free drainage. To restore sickly plants, early in spring, before they begin to push, turn the plant out of the pot, shake the soil away, prune any diseased roots, and if the top be weak or straggling, cut back the shoots proportionately, and re-pot in one just large enough to admit the roots conveniently, and use a little more peat than loam in the compost, and a little extra sand. Let the plant be plunged where it can have a little bottom-heat, and water *sparingly* till it begins to grow, and then gradually to increase. After Camellias have done blooming, and just before the shoots push, re-pot them, and let them have an increase of warmth and moisture whilst forming new wood; it will be vigorous, and yet well ripened, which is essential to secure a due supply of flower-buds. To increase Camellias, budding, grafting and inarching are adopted. Inarch in spring, just before the shoots push. Bud when the new wood has become firm, and graft the first week in September.—*A Practitioner.*

Mulberries.—Can you give me any information on the subject of the blossoming of the Mulberry? I have two trees about twenty-five years old, which, until the last three years, have borne fine crops of fruit. About three years ago one or two branches on one of the trees produced flowers resembling catkins and no fruit, and now both trees are covered with them, and there are very few fruit blossoms. Is this usual, or is it to be expected to continue, and could any thing be done to check its re-occurrence? There is a large old tree in a garden near, which bears good fruit and has none of the catkins or false blossoms. Chas. Berrill.

[This is the case of a tree having taken to bear male flowers only. We should be very glad to learn from our correspondents, if they know of any similar instance.]—*Gardener's Chronicle.*

Panama Hats.—Dr. Berthold Seemann, in the "Bonplandia," says they are not made on the Isthmus alone, but most of them, and the best, in Manta, Monte Christe and other places in New Granada, south of Panama. Panama hats are worn all over the continent of America, and in the West Indies. The best are sold at from $1 50 to $2, and but seldom sent to Europe. The staple article for exportation is made by negroes in the tropical latitudes. Panama hats excel other straw hats in their pliancy, as they consist of but one single peice, and can be rolled up and even carried in the pocket without much injury being done to it. During the rainy season the Panama hat easily gets soiled; it is then cleaned with soap and water, then with the juice of lemon or some other acid, and when dried in the sun its whiteness is restored. The plant which is used for making the Panama hat is called "Tipijape," and "Porto rico,"—botanical name "Carludovica palmata,"—looks much like a Palm tree, and grows along the western coast of Equador and New Grenada. The leaves are gathered before they unfold, the ribs and coarse stalks taken out, exposed to the sun for 24 hours, soaked in boiling water till they get white, when they bring them up in the shade for bleaching. The plaiting of the straw is hard work. Common quality hats take a day or two, fine ones upwards of three months, hence the great difference in prices. The best time for plaiting is when the straw has a certain degree of moisture, viz.: in the damp weather, in the rainy season, and in the early hours of the day.

Antennaria margaritacea.—Hardy silvery leaved plants, are now much sought after by English gardeners for their ribbon beds, and masses of colored foliage. One of the most popular for this purpose is the Antennaria margaritacea, a very common weed in American thickets, but of which we make no use.

Best 12 Roses at the last great London Exhibition.—In the class of 12 blooms, Mr. Hedge was first with fine examples of Souvenir de Malmaison, Souvenir de la Reine d'Angleterre, Madame Knorr, Comtesse Cecile de Chabrilliant, Wm. Griffiths, Chas. Lawson, Gloire de Dijon, Madame Cambaceres, Mathurin Regnier, Pauline Lanzezeur, Reine Victoria, La Fontaine and Madame Boll. Mr. Corp, Mr. Ingle, Mr. Helyarand others also showed this class.

Keep your plants clean. Dust and dirt on leaves make the plant unhealthy, and will in time kill it.

Venetian Water Cisterns.—The city of Venice is wholly supplied with rain water, which is retained in cisterns. The city occupies an area of about 1300 acres. The annual average fall of rain is 31 inches, the greater part of which is collected in 2077 cisterns, 177 of which are public. The rain is sufficiently abundant to fill the cisterns five times in the course of the year, so that the distribution of water is at the rate of 312 gallons per head. To construct a cistern after the Venetian fashion, a large hole is dug in the ground to the depth of about nine feet. The sides of the excavation are supported by a framework made of good

oak timber, and the cistern thus has the appearance of a square truncated pyramid with the wider base turned upward. A coating of pure and compact clay, one foot thick, is now applied on the wooden frame with great care; this opposes an invincible obstacle to the progress of the roots of any plants growing in the vicinity, and also to the pressure of the water in contact with it. No crevices are left which might allow the air to penetrate. This preliminary work being done, a large circular stone, partly hollowed out like the bottom of a kettle, is deposited in the pyramid, with the cavity upward; and on this foundation a cylinder of well-baked bricks is constructed, having no interstices whatever, except a number of conical holes in the bottom row. The large vacant space remaining between the sides of the pyramid and the cylinder is filled with well-scoured sea-sand. At the four corners of the pyramid they place a kind of stone trough, covered with a stone lid pierced with holes. These troughs communicate with each other, by means of a small rill made of bricks, and resting on the sand, and the whole is then paved over. The rain water coming from the roofs of the buildings runs into the troughs, penetrates into the sand through the rills, and is thus filtered into the well-hole by the conical holes already described. The water thus supplied is limpid, sweet and cool.

Superior Roses.—It will thus be seen (says the *Cottage Gardener* of a London exhibition,) that whenever a Rose Show is held, there are some kinds which are sure to hold a leading place; and that all over the country General Jacqueminot, Eugene Appert, Madame Vidot, Jules Margottin, and other well-known names are certain of victory, or of a place in the victor's triumph.

Geraniums in Windows.—Those just going past should be cut off to where the next sign of a bud appears—at least the one or two joints next the stalk being cut off with the dead flower-stem. Turning out the ball, the old soil that shakes off easily should be thrown away, or if there seems to be scarce any thing but roots, a new pot should be taken of rather a larger size, drainage being put in, and as much fresh soil as can be shaken and pressed down gently. The surface soil also should have been loosened and peeled off, and some new mould, of course, will fill up this place also. Treated in this manner, I have sometimes turned out geraniums in June to a place upon the roof, where, between two slopes, it was very hot, and where the wind could only throw the pots upon their sides, and after standing there a few weeks, they have come back again to my window in the gayest and brightest dress, always, however, requiring unlimited scrubbing to remove the effects of the London blacks.—*Gardener's Chronicle.*

Horticultural Notices.

THE AMERICAN POMOLOGICAL SOCIETY.

Pursuant to notice in our columns, this Society held its Ninth Biennial Session in the Horticultural Hall on the 17th, 18th, and 19th of September, just as we are going to press with this number. Next month we hope to give an abstract of the whole proceeding.

There was no falling off in the interest heretofore felt. A very large number of new members was added to the list; and, but for the non-attendance of Southern members, and others whose military duties demanded their absence, one would scarcely have thought that pomology was second to any other pursuit in the national mind just now. The address of the President, Hon. Marshall P. Wilder, was replete with its usual interest. He remarked that a kind Providence permits us to assemble for consultation and friendly interchange of experience in the delightful art to which our Society is devoted. To all he extended a hearty welcome to this place. True to the spirit of our venerable fathers, the founders of New England Pomology, we have brought specimens of the progress we have made. The first seeds of our fruits were planted by the colonists of Massachusetts Bay in the year 1629. Soon after, the Colonial Legislature granted to John Winthrop, then Governor of the Colony, a section of land, on condition that the grantees should plant thereon a vineyard and orchard, which grant received its name from his official position, and has ever since been known as Governor's Island, in the harbor of Boston. About the same time, Governor Endicott, of Salem, planted the first pear trees in that place, one of which is still living and bears his name.

Precisely what the intermediate progress may have been we are unable to state; but after a space of a century and a half, we find in the *Boston Gazette* for March, 1770, the following advertisement of the gardener of the immortal John Hancock, the first signer of that memorable instrument, the Declaration of Independence:

"To be sold by George Spriggs, gardener to

John Hancock, Esq., a large assortment of English fruit trees, grafted and inoculated of the best and richest kind of cherry trees, pear trees, plum trees, peach trees, apricots, nectarines, quinces, lime trees, apple trees (grafted and ungrafted), and sundry mulberry trees, which will be fit to transplant the next year, and medleys."

To these worthy men, and others of more recent date, whose labors inspired our fellow-citizens, may be traced the interest which, in the year 1829, originated the Massachusetts Horticultural Society, and, through the agency of this first Association, introduced into this section the results attained by Van Mons, Knight, and other European pomologists. Thus was here laid the foundation upon which the science we seek to promote has advanced to a rank not inferior to that attained in any other country in the world.

He paid a handsome compliment to the late Hon. Samuel Walker, of Roxbury, Massachusetts, who died at his residence since the last meeting of the Society. He also alluded feelingly to the venerable W. D. Brinckle, M. D., whose infirmity detains him from meeting with us.

This is the fourteenth year since the organization of the Society. He alluded patriotically to the unhappy condition of our country, which detains many of our members from meeting us here. He spoke of the good which the discussions have produced over our country.

He referred to the fruit failure of 1861. The previous autumn, he said, had been marked with an early and very severe frost. On the morning of October 1, 1860, the mercury fell in the vicinity of Boston, to 24° Fahrenheit, causing the apples and other fruits to freeze on the trees, and, in some instances, to burst open. This was the most severe of any on record so early in the autumn. Again, on the morning of February 8, 1861, the mercury fell, in several places around Boston, to 25° below zero, a degree never before recorded. The previous day had been mild and pleasant. Again, early in the month of March, the fluctuations of the mercury were equally astonishing. The third day was warm and delightful; the thermometer at Dorchester, four miles from this city, stood at 75° at two o'clock, P.M., and at eight o'clock, at 65°; and although no very severe cold succeeded immediately, yet, on the morning of the 18th inst., the glass stood at zero. These extremes of temperature were most unusual and unnatural, and not only destroyed the crop of fruit, but injured many trees past recovery, especially peaches, plums and cherries. These vicissitudes serve to illustrate the comparative vigor, hardiness and power of endurance in some varieties of the same species, and develope different degrees of susceptibility in others, and thus furnish most useful information to the cultivator.

As to aspect of fruit trees, I am more and more convinced of its importance. The Belgians, in their descriptive catalogues, are accustomed to designate the aspect most favorable to each sort; and when we shall be able to do the same, we shall have attained a result most eminently desirable. In regard to shelter, here in the North, so as to protect our trees from currents of fierce, drying winds, which are as equally injurious to vegetation as a parching heat, no one can doubt its beneficial effect. The influence of shelter and aspect is more perceptible in some varieties than others. This is seen in the fact that certain kinds are healthy and beautiful on fences or in sheltered places, while they are worthless elsewhere.

He next invited attention to the demands of greater vigilance and perseverance in the art of pomology,—to the mode of pruning, the importance of thinning fruit, dwelling upon these topics at considerable length. He dwelt upon the influence of the rural art upon social life in a most happy manner.

In conclusion, he could not help wandering from his usual course of totally ignoring public affairs. He made a patriotic allusion to the duty of all in this crisis to uphold the Union and the Constitution, which has made us all that we are and all that we desire or wish to be, to support the government and the flag of the Union, not doubting, in spite of the dark clouds at that moment surrouning the national cause, that the day would come when peace would again wreathe her olive leaves around these distracted States and bind them together in one great circle of life and love.

MASSACHUSETTS HORTICULTTRAL SOCIETY.

At the show on the 16th inst., there was a large display of apples.

The varieties were the same as shown on former occasions, with a few additional ones, among which may be mentioned, very handsome specimens of the Garden Royal, shown by H. Vandine, and the Early Joe and Foundling by A. Clement. The display of pears was the largest of the season. Hovey & Co., Walker & Co., J. F. Allen, and others showed specimens of varieties too numerous to particularize. President Breck showed fine speci-

mens of the Boston Nectarine. The display of grapes was principally by R. W. Turner and R. S. Rogers, both of whom showed fine specimens of several kinds. Mr. Rogers had eight dishes. Mr. Vandine kept up the show of plums. He thinks he shall have fifty bushels of choice kinds this season. There were several specimens of the Dorchester High-bush blackberry, of large size and fine flavor. Specimens of the Globe Artichoke, a plant seldom cultivated in this section, were shown by James Nugent. There were several fine specimens of tomatoes on the table. C. N. Brackett showed Lester's "Perfected" and Feejee Island, and J. B. Moore the Mexican and other kinds.—The flower department was well filled, the most prominent and showy being the gladioli, of which President Breck had upwards of fifty kinks, making a beautiful display.—*Boston Cultivator.*

FRUIT GROWERS' SOCIETY OF EASTERN PENNSYLVANIA.

[*Continued from page* 256.]

Remedial agencies are however so amply detailed in books, and knowledge through this medium is becoming so much diffused among intelligent agriculturists and fruit-growers, that it would be an act of supererogation in me to repeat them here. The insects themselves, however, in their mature state, you may not always have an opportunity of seeing, and I have therefore selected from the grand mail-clad army of *Coleoptera* a few individuals as representatives of the "division" *Curculionidæ*, with the numbers attached, as they stand in the general catalogue of my collection.

I may add the interrogatory here, before I proceed any farther: If our pigmy species are capable of doing so much injury, what might our condition be if we were subjected to the voracity of those mammoth representatives that are here exhibited from South America, Asia and Africa?

No. 1261 is the "Rice Weevil"—*Sitophilus Oryzæ* of Linn. Chiefly confined to the rice growing districts of the Southern States, but it also attacks other grain and grass seeds, especially in the East Indies and Southern Europe, and also the corn in Guinea. It is perhaps fortunate too for us that our climate is too cold for their general multiplication in this latitude, although I have found them alive among the rice that reaches us during summer time.

No. 1262 is the "Grain Weevil"—*Sitophilus granaria*, of Linn. This insect has been introduced into this country in wheat from Europe, and is one of the most destructive insects we have, to stored corn, wheat and other grains. These insects pair, and lay their eggs in the end of April and beginning of May. The female cuts a small hole in the different kinds of grain into which she lays her eggs, and the young grubs, which are white footless maggots, live on the inner farina, devouring sometimes all except a mere outline shell, and change to a pupa and a perfect insect there. If the location of the granary is very cold, they sometimes forsake the heap of wheat in winter time for warmer quarters. The grubs and insects may both be killed by subjecting the grain which contains them to a heat of about 140° Fahr., according to a report of Mr. Mills, published in the proceedings of the "London Entomological Society."

No. 1291 is the "Potato-vine Weevil"—*Baridius trinotatus*, of Say.—The females lay their eggs singly at the base of the leaf of the potato vine, and the young grubs eat their way in and down the stem towards the roots, where they undergo their transto formations to a perfect beetle in the month of October. The "potato rot" has, I think, been erroneously attributed to these insects. It is certain that the "rot" has extensively prevailed where the beetle was not known.

No. 1345 is the "Locust Weevil"—*Apion Sayi*, of Schober. This little insect deposits its eggs upon the pods of the common Locust tree, and the young grubs feed upon the bean within the pod, and undergoes its transformations there. I have detected the mature insects in large numbers on the locust trees eating holes into the leaves.

No. 1357 is the "Oak-leaf Weevil"—*Attelabus analis*, of Weber. The female deposits her eggs upon the oak leaf, and the young grub, when it is hatched, eats of the one side of the leaf, causing it to roll up as a protection to it. They are not very numerous nor very hurtful yet.

No. 1353 is the "American Grape-vine Weevil"—*Rynchites bicolor*, of Fab. This insect has been detected, although not very extensively, in destroying the young grape buds in the spring. They however do not confine themselves to the grape vine, but other tree buds are liable to their attacks. [The grubs burrow inward from the bud towards the heart of the wood, where they change to a pupa.] They also destroy the *leaves* of the grape, roses, and fruit trees. Its habits are not fully known yet.

No. 3054 is the "European Grape-vine Weevil"—*Rynchites betuli*, Schonber. Exceedingly destructive to grape vines and fruit trees on the continent of Europe. It is known that the female deposits her eggs upon the leaf of the vine and apple,

pear and other fruit trees, and that she proceeds to roll the leaf up to protect the eggs, where they hatch; and after the grub is done feeding, the leaf having dried, falls to the ground and buries itself, and changes to a pupa, coming forth a perfect insect the following spring, when it attacks the buds of the grape and other fruits.

No. 1340 is the "White-oak-bark Weevil"—*Arrhenodes septemtrionalis*, of Fab. I have found numbers of these insects under the bark of White-oak trees in burrows, formed by both the larvæ and the mature insects. They are, I think, partial to dead white-oak timber, but are also sometimes found in living standing white-oak trees.

No. 1327 is the "Pine Weevil"—*Hylobius Pales*, Hbst. A very destructive insect, found in May and June. The larvæ of these insects get under the Pine trees in the south, where, from their immense numbers, they have been known to unbark and defoliate whole districts, leaving the naked trunks standing in ghastly array.

No. 1297 is the "Chestnut Weevil"—*Balanius nasicus*, of Say. Also destroys Chinquapins, Filberts and other nuts. It will be observed that this insect has a very long rostrum or *snout*,—such instrument being necessary to reach in and puncture the young chestnut in the bur. I have often taken this insect on the chestnut and chinquapin burs in the month of September, and have noticed an operation which appeared to me as if the insect took the egg in its mouth and pushed it into the incision it had made.

No. 1285 is the "Plum Weevil"—*Conotrachelus Nenuphar*, of Hbst. Attacks indiscriminately the plum, cherry, apple, pear, quince, and also the soft excrescences, and tender twigs or buds of these trees, when no fruit is present. I need say nothing more on the subject of this insect here, for so much has already been said and written that any thing from me would be superfluous. The most difficult part of its history for solution, is, what becomes of it in winter? Let me offer a conjecture, based upon my experience. Long before I had ever read a word about the Plum Weevil, or, indeed, any other weevil, or was able to identify any of them with their characters as since developed, I found these insects during the months of November, December, February, March and April, hidden under the bark of trees, under stones, or in chinks or crevices, and therefore it is my opinion that they hybernate during the winter, as a general thing; and do not remain in a long pupa sleep from June until the next June again.

No. 1354 is the "European Plum Weevil"—*Rynchites cupreus*, of Schonber. This insect belongs to a different genus from the American Curculio, and also attacks other kinds of fruit. Quite different from ours, the female, after she has pushed her egg into the plum, cuts the stem nearly off so as to cause it to fall to the earth by the agitation of the winds. But of this insect, in consequence of the plum laying so long, and either drying in or rotting from extreme moisture, the grub is destroyed by drought or starvation.

No. 3060 is the "European Apple Weevil"—*Anthonomous druparum*, of Linn.—This is also an European Apple Weevil. We have a representative species in the United States, but it has, I believe, not yet been identified with the worm in the apple.

No. 1203 is the "White-pine Weevil"—*Pissodes affinis*, of Randal. This insect is especially destructive to the White Pine, but it operates differently from the other Pine Weevil. The females deposit their eggs on the ends of the shoots, and, after they are hatched, the young grubs work into the wood; and where their numbers are great, the leaves of all the infected branches become yellow or brown, as if burnt, and the trees become stunted in their growth.

No. 1263 is the "Plantain-leaf Weevil," or "Thirteen-spotted Red Weevil"—*Sphenophorus tridecempunctata*, of Say. The mature insects eats holes in the common Plantain-leaf, and also is found eating other species of vegetation. They come out of the ground in the month of June, but I do not know what species of vegetation, fruit or nut the larvæ attacks. They formerly belonged to the old genus *Calandra*, which also included the "Grain Weevil."

No. 2964 is the "Brazilian Palm Weevil"—*Rhyncophorus palmarium*, of Fab. This is the largest species of the weevil known to me, or perhaps to the world, and is the one specifically alluded to in my general remarks.

No. 2963 is an "African Weevil," perhaps also a "Palm Weevil"—*Rhyncophorus Phœnicis*. I know nothing about its habits and history, not having access to any work where a description of it may be found. Being of the same form and the same genus as the Brazilian, I conjecture that it is similar in its habits.

No. 1281 is the "Palm Weevil" of the Southern States—*Rhyncophorus Zimmermanii*, of Schonber. It is probably similar in its habits to the Brazilian Palm Weevil, attacking different kinds of palms, and doubtless also the emblematic Palmetto of South Carolina.

No. 1360—*Cataparus lunata*, of Fab. This insect I have never found on any fruit or vegetable, but I have frequently found it under stones during spring and autumn. Many years ago I was informed it was seen eating fruit buds early in the spring. I have no doubt, when its history is fully known, that it will prove an enemy. My impression is that I once caught one destroying the buds of a pear tree.

No. 1367 is the well-known "Pea Weevil," or "Pea Bug"—*Bruchus pisi*, of Linn. The habits of this insect is too well known to need any additional remark from me at this time, and that knowledge is by no means a monopoly.

No. 1282 is a "Chinese Weevil"—*Cyrtotrachelus longipes*. It bears some resemblance in form to our Chestnut Weevil, only that its snout is not so long as the former. My impression is that it pierces some large species of nuts in that country, and that its long anterior legs are for the purpose of holding the nut until a hole is pierced into it, into which the females push their eggs.

No. 1347 is the "Minor Diamond Weevil"—*Entimus regalis*, of Brazil. This insect I only exhibit here for its beauty, for I cannot now recall its history and habits.

No. 1347 is the "Major Diamond Weevil"—*Entimus Imperialis*, of Fab., and is also a native of Brazil. The Brazilian ladies are said to use these insects—set in jewelry—as ornaments of dress.

No. 1322 is the "Jamaica Weevil"—*Entimus splendens*, from the Island of Jamaica.

No. 2918 is a "Brazilian Nut Weevil"—*Macromerus crinitarsis*. This insect seems to be allied to our genus *Balanius*, and doubtless is of similar habits.

No. 1001 is not, properly speaking, a *weevil*, at least it is not a *snouter*. It is the *Trogosita mauritanica*, of naturalists. It is very destructive to stored corn in Europe, and especially in France. My impression is that this insect has been introduced into this country from abroad. I have often found the mature insect in ground-nuts, and in English Walnuts, and, on one occasion, I saw tens of thousands of them sieved from a cargo of Indian corn, that was brought down the Susquehanna.

No. 1243 is the "Pear Blight"—*Tomicus pyri*, of Prof. Peck. This insect, Dr. Harris says, deposits its eggs in the ends of the tender branches of the pear tree, and the young grubs bore downward in the heart of the branch, causing the leaves to wilt. These ought to be clipped off, with a pair of pruning shears and burnt, together with two or three inches of the branch.

No. 1000 is the "Apple-tree Blight," according to the people in the Western States. It is the *Bostrichus aspericaulis*, Germ. It does not deposit its eggs in the ends of the branches, but in the axils of the leaves.

No. 1257 is the "Pitch-pine Weevil or Beetle"—*Hylurgus liguiperda*, of Lec. This is a kind of American "Typographer" in its larva state. Its larvæ course under the bark of the Pitch-pine, being in a variety of hieroglyphical figures. It is a little singular that *turpentine*, which is obnoxious to nearly all species of insects, should not have the effect to exempt the Pitch-pine from the attack of any insect; but this insect prefers this tree to all others.

Many of the foregoing insects, and if the truth were known, perhaps *all* of them, have parasites which prey upon them in the larvæ state, and destroy more than ever reach maturity. Some experiments have been made upon them, which demonstrated that out of one hundred larvæ eighty have perished before reaching perfection, from the attacks of various species of Ichneumon fly; but those that survived the Ichneumon were still numerous enough to be destructive.

Some of those insects—for instance the Grain Weevil—are without wings, and of course cannot fly; others again, like the Plum Weevil, have an ample pair of them, and therefore the practice of tying raw cotton around the trunks of the trees, to prevent the ascent of the *curculio*, is altogether useless, so far as they are concerned. I have seen this cotton remedy applied within the last two years in this neighborhood.

When I was a boy of eight or ten years of age, all the ponds about my native village, and all the eddies and pools along the shores of the Susquehanna river, were stocked with frogs, filling us youngsters with a kind of awe at their nightly "blood-an-ouns." At length a new comer into the village began to demonstrate practically that frogs were made to be eaten; and within three or four years, nothing except an occasional very shy, or "half-frightened to-death" frog could anywhere be seen. After the failure of all artificial means, we will eventually have to fall back upon the economy of nature, and find out what insects were made to be eaten, and what classes of similar or other animals are to be the eaters. In this way the great problem is perhaps after all to be solved, as a general thing. Special or local remedies however must not in the meantime be disregarded or ignored, but try all things, and "hold fast that which is good."

THE
GARDENER'S MONTHLY.

DEVOTED TO

Horticulture, Arboriculture, Botany & Rural Affairs.

THOMAS MEEHAN, Editor.
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Hints for November.

When it was proposed to commence the publication of this journal, a specimen of what the matter would be was circulated on a broad sheet. When the paper appeared in magazine form, many of our readers expressed a wish to have the best of the articles that sheet contained re-published, so that they could be bound up in one volume together. A few of them we have given from time to time,—as, for instance, "Cheap Glass Houses," "Glazing Muslin," "Garden Decorations," "Pruning Evergreens," &c.,—just as the season or press of other matter afforded a chance. In the present number we re-produce another useful hint on "Water in Greenhouses," and give in this chapter some of the "Hints for November" then published:

GREENHOUSE.

The greenhouse will now begin to look more natural, after having had the stock housed last month. With many plants having probably been taken up out of the open ground, many dead leaves will daily appear, requiring frequent removal, neatness is one of the chief beauties of a greenhouse. Acacias, and Australian plants generally, with hard wood and delicate roots, should be placed at the coolest end of the house, where little water will be required. These plants should not be watered often; but when they are, it should be thorough. Frequent waterings soon render the roots of these plants unhealthy, when it is very difficult to restore them to vigor. Whenever the foliage becomes of a sickly yellow hue, the best plan is to plunge the plant in a larger pot, filling the space with moss,—and when the plant requires water, give it only through the moss, unless the plant seem to become so dry as to suffer, when it should receive one thorough watering. Very little fire should be applied to a greenhouse,—just sufficient to keep it at about 45°. Unless very far north, but little fire-heat will be required this month.

WINDOW PLANTS.

Window Plants should not be kept very warm at this season. They should have all the sun and air, and as little of the artificial heat of the room as possible. These remarks apply especially to Mignonette, which is very impatient of in-door confinement. Succulents, such as Cacti, are excellent window plants in this respect, as the dry air does not affect them. To keep the air about the plants moist, is one of the secrets of window-culture. Some who have very fine windows well stocked with fine plants, make glazed cases with folding doors of them, by which, when the room is highly heated and very dry, they can be enclosed in an atmosphere of their own. In such cases, ferns and mosses can be grown to perfection, and pendant plants in hanging vases give a Brazilian forest appearance to our happy Christmas homes.

AQUARIUMS.

Aquariums are now so well understood, as to be in a fair way to become essentials in the room-gardening of all persons of taste. Growing plants, fishes and water reptiles are placed in the same globe or tank of water, and the gases which the fish reject are the food of the plants; while the plants, on the other hand, prepare the elements necessary for the health of the fish. By this beautiful principle of reciprocity, both plants and animals remain in perfect health, without the water scarcely ever being changed. A tank for plants and animals might form the base of a pretty parlor ornament, a central portion consisting of a case for ferns and similar plants, and a cage for birds on the top.

KITCHEN GARDEN.

In no department of gardening is a deep and rich soil more important than in this; and at this season we could not give better advice than to lose no opportunity of improving it in this respect. Trenching may be carried on whenever the ground is not

frozen over an inch in depth. We are not in favor of that species of trenching which throws the surface-soil to the bottom, and brings the subsoil to the top, in the preparation of a new garden. This should only be adopted for worn out soils. The proper plan is to throw out the surface-soil on a strip three feet wide, then breaking up the subsoil thoroughly, to the depth of one or one and a half feet. On this broken subsoil the surface-soil from the next trench is thrown, and so on until the whole be finished. The manure should be so applied as to be worked in with the surface-soil as the work proceeds. It is little use to attempt to grow vegetables well, unless the soil is so treated. They may be and are grown on thin soils, not only at a great expense for manure, and at a great risk of dying out in a dry season, and of having the roots rotted out in a wet one. In those parts where the frost has not yet been severe enough to injure the celery crop, it may have another earthing up. Care must be exercised in the operation not to let the earth get into the hearts of the plants, or they will be liable to rot. Where the plant has evidently finished its growth for the season, measures should be taken to preserve it through the winter. For family use, it is probably as well to let it stay where it is growing, covering the soil with leaves, litter or manure, to keep out the frost, so that it can be taken up as wanted. Where large quantities are frequently required, it is better to take it up and put it in a smaller compass, still protecting it in any way that may be readily accessible. It always keeps best in the natural soil, where it is cool and moist and free from frost, and whatever mode of protection is resorted to, these facts should be kept in view. Beets, turnips, and other root-crops, will also require protection. They are best divested of their foliage and packed in layers of sand in a cool cellar. Parsnips are best left in the soil as long as possible. If any are wanted for late spring use, they may be left out to freeze in the soil, and will be much improved thereby. Cabbage is preserved in a variety of ways. If a few dozen only, they may be hung up by the roots in a cool cellar, or buried in the soil, heads downward, to keep out the rain, or laid on their sides as thickly as they can be placed, nearly covered with soil, and then completely covered with corn-stalks, litter, or any protecting material. The main object in protecting all these kinds of vegetables is to prevent their growth by keeping them as cool as possible, and to prevent shrivelling by keeping them moist. Cabbage plants, lettuce, and spinach sown last September, will require a slight protection. This is usually done by scattering straw loosely over. The intention is principally to check the frequent thawings, which draw the plants out of the ground.

In making new vegetable gardens, a south-east aspect should be chosen, as far as practicable. Earliness in the crops is a very great desideratum, and such an aspect favors this point materially. Too great a slope is objectionable, as inducing too great a run of water in heavy rains. The plots for the crops should be laid off in squares or parallelograms, for convenience in digging, and the edges of the walks set with box edging. If water can be introduced, it is a great convenience.

Sometimes broccoli does not head before there is danger of frosts, especially if growing vigorously. If taken up with small balls of earth, and set in a damp cellar, they will still perfect themselves.

Asparagus beds, after the tops have been cleared off, are better covered with litter or stable-manure. The plants shoot easier for it next season.

When the ground becomes frozen, or no other work offers, preparation can always be made for advancing prospective work when it arrives. Bean-poles may be made; and if the ends are charred, and then dipped in coal-tar, the commonest material will be rendered nearly equal to the best cedar.

FORCING FRUITS AND VEGETABLES.

Few subjects are better worth the attention of nurserymen, market-gardeners and amateurs, than this very interesting branch of gardening; but it has been strangely and unaccountably neglected. Whether as a source of pleasure or profit, it is an equally delightful occupation; and the considerable space we intend to occupy with the subject will, we trust, be the means of awakening some enthusiasm in its behalf.

Potatoes, peas, beans, cauliflower, radishes, lettuces, tomatoes, asparagus, rhubarb and parsley are the chief vegetables usually forced; and, among fruits, the apricot, cherry, fig, grape, nectarine, peach, plum and pine.

Grapes every one wishes to grow. For early forcing, they are the best grown in pots,—that is, where fire-heat is used; when a "cold grapery" is employed to produce them, they are usually grown in the open ground. This is a good season to prepare for the latter mode of culture, so as to have every thing ready to plant out the vines next spring. Houses can now be constructed from one to three dollars per running foot, and capable of growing grapes to perfection, and, in many places, from fifty cents to one dollar a pound can be very readily ob-

tained for the fruit. The borders for the vines need not be expensive. A dry bottom is essential, which must be obtained either by draining, or, what is better, elevating the border above the surrounding soil. A very durable and substantial border may be made by taking out the soil two and a half feet deep, and filling in with bones and broken stone, lumps of charcoal, brickbats, or any coarse material, to the depth of one foot, then filling in the remainder three inches deep with sods from an old pasture, to which about a third of well-decomposed cow or horse-manure has been added. The border may extend under the vinery, and some ten to fifteen feet beyond.

Pot vines are usually fruited the year following that in which they are raised. Plants struck last spring, and grown all summer, will now be ready, either to put away till wanted in spring, or started at once, where sufficient heat is at command. They should be at once pruned to the desired length, usually about six feet, the laterals taken off, the canes painted with a mixture of sulphur and soap, to destroy insects; and those not just now required, either put into a cellar or shed, secure from frost, to avoid danger to the pots. Those desired to fruit early should be at once placed in a temperature of 55° to 60°, and the canes bent down to aid in causing all the buds to burst equally. This, however, depends on the condition of the cane itself. A vine with badly developed buds will not break well, no matter how well managed. The buds will only swell under the above temperature; but it is not well to start with much heat.

In a house of this character the fig may also be started at the same time, and the pine grow very well. The other fruits named will not do so well started with these, unless in the hands of greatly experienced gardeners, as the heat necessary to ripen the grapes so early is too much for them.—Dwarf beans, tomatoes and cucumbers would, however, do very well. These may be sown at once for this purpose. Peaches, nectarines and apricots do very well planted at the back wall of vineries, and especially do they do well in tubs and pots. For the latter mode it is best to grow them one season before forcing, as better and handsomer specimens can be made from one year grafted plants. Now is the time to select those that we may desire to force the next spring. They should be lifted and potted very carefully, and afterwards placed in a cool cellar till February. Those that were potted last spring, and have a good growth, and are established sufficient to warrant an early forcing, may at once be started in a heat of from 45° to 50°, and the heat increased to 55° in the course of a few weeks. They should be previously cleaned, as already recommended for grapes.

Plums and cherries do not do very well forced. The difficulty is in getting them to ripen well. We have seen the best success when started with peaches at this time. Strawberries force easier than any fruit, and, in our opinion, when gone into properly, will pay even better than grapes. They may be had all the year round when a heat of 60° can be maintained, simply by bringing forward a few every two weeks. The pots of plants should be prepared in September, six-inch sizes being employed. They should be started in a heat of 55°, till the flowers are set, and ripened in one of 60°. They must be kept near the glass, and the red spider carefully watched. Those who have not command of heat may have them very early by potting good plants, keeping them in a moderately dry place till February, and then setting them in frames.

A house fitted for strawberry forcing is just the place to force asparagus, rhubarb, radishes, peas and potatoes, which do not do well with much heat. Any of these may be started now either in pits or boxes. Peas are sarcely worth forcing, except as a luxury. They will not bear freely unless very near the light.

A cauliflower pit should be in every garden where leaves or manure can be had. Radishes and lettuce can be forced at the same time, and will be in use before the cauliflower grows in their way. Pits of stone or brick, about six feet under and one or two above the ground, are usually employed, with glass sashes over. The leaves should be filled in as early as possible, so as to get their most violent heating over before the plants are set out. A watering as they are filled in assists this, which may be known to be effected by the sinking it exhibits. It is important to have the plants set as near the glass as possible; a few more leaves should, therefore, be added before the six inches of soil required is placed on. The plants sown in September should be planted fifteen inches apart, and lettuce and radishes may be sown broad-cast between. Asparagus, rhubarb and parsley are prepared by taking up the old roots at this season.

NURSERY.

The hints given for preparing the ground well, in other departments, applies with tenfold strength to this. If a nurseryman has not capital enough to manure and trench all his ground well, he had

better do only a part, even though he has to leave the balance lie waste and in weed.

Almost all kinds of tree seeds may be sown now, except pines, unless there is any danger from mice or other vermin. It is, on the whole, best, as soon as the seeds are to hand, to place them in boxes with more than an equal bulk of sand, and set them out to the weather to freeze. They must be sown out in the spring as early as the ground will work. Some seeds will not germinate till the second year. If they do not appear early in the season, they should be examined to see if the kernels are sound, and if so, they should not be disturbed. Many seeds that usually come up the season after sowing, will not do so if the shells are allowed to dry and harden first. Cherries, peaches and most fruits will often lie so, and halesias, roses and thorns occasionally stay three years. Seed-beds should be selected in a deep, warm and rich soil, and one tolerably free from the seeds of weeds; on any other it will not pay to raise seedlings.

In States where the frosts are severe, seedlings of all kinds that have not attained a greater height than six inches should be taken up, "laid in" in a sheltered place thickly, and covered with any thing that will keep frozen through the winter. If left out, they are liable to be drawn out and destroyed. Young seedling stock received from a distance should be also so treated. In the more southern States they may be set out at once, and as much planting as possible be accomplished that will save spring work. Many cuttings will not do well unless taken off at this season and laid in the ground under protection, like seedlings,—the quince, syringas or lilacs, spiræa prunifolia, and some others. In the "mild winter States," evergreen cuttings should be made now, and set out thickly in rows. The leaves need not be taken off. but short, thick-set branches laid in under the soil. When rooted next fall, they may be taken up and divided into separate plants. In more northern States, evergreens may not be so struck at this season, unless protected by greenhouses and frames. Where these are at hand, evergreens may be put in, in boxes or pans, all through the winter.

Communications.

MY GARDEN EXPERIENCE.

THE STRAWBERRY.

BY Y., GERMANTOWN, PA.

Mr. Editor—Having communicated my experience in the cultivation of the Tomato, by the mulching of which I have had an abundance of splendid fruit (and that without a succession of planting,) during the extremely dry weather, and the promise of a full supply until frost, I now give my experience in the growing of strawberries.

I have four varieties in cultivation,—the Triomphe de Gand, Hovey's Seedling, Wilson's Albany, and Lennig's White. I plant my beds in the spring of the year,—having tested the fall planting also,—and have found it the most successful plan for two reasons.

1st. By planting in the spring of the year, the plants take root without any labor of watering, which, I have found, only serves to cause the surface to bake, retards the growth of the runners, and prevents the young plants from taking a sufficient root-hold to keep them from being killed by the severe winter frosts. By planting in the spring, this is all avoided, and the plants, from their natural tendency to take root at this season, speedily do so, and soon get out of the need of help, except to keep them free from weeds, loosening the earth occasionally, &c.

2d. By planting them at this season, with ordinary good weather for growing, a fair crop of fruit may be realized from them the next spring, which, in the case of the fall planting, is not the fact, because the plants merely take root before winter is upon them, and hence you have no fruit, except from the original plants, they having made no new ones.

After the first year's growth, the beds in that time being well set with plants, I suffer no. more runners to take root and remain. This is prevented by pulling up and cutting from the original plant all runners made during the spring and time of fruiting, first clipping off the leaves in order to get at them. By thus keeping the runners from increasing, the plants will not become too thick, nor will the female plants in the Hovey's be choked out by the male, which make so many runners. Another good purpose is also served, which is in taking off the runners after the plants have fruited, their growth by that time having pretty much ended, and are not caused to push others, which

would not be the case were they pulled off earlier. Taking these runners off after they are done growing, will also prevent injuring the next year's fruit; for I have found that the fruit-buds would start out and blossom in the fall if the runners were pulled up before done growing, and the next season that plant would produce no fruit.

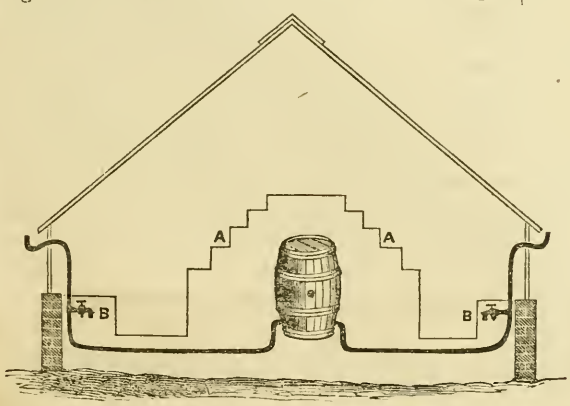
The Triomphe de Gand and Hovey's Seedling I grow in beds two feet wide, allowing six inches to a plant, which I find no more than sufficient room when fruiting. They are thus prevented from becoming too damp and rotting the fruit. The Albany Seedling and Lennig's White I grow in rows, similar to potatoes, and find that they thus yield splendidly, showing the fruit to good advantage, making it convenient to pick, as the former need careful handling to preserve the berry whole.

There is no reason why every person possessing 100 square feet of ground, should not have thirty quarts of nice strawberries every year from part of it, because any one who can grow a crop of beans can cultivate them. Keep them free from weeds, cover in the fall with strawy manure, take the straw off in the spring, and prepare for a good crop of the first fruit of the season that greets our palates.

WATER IN GREENHOUSES.

BY R.

In greenhouses in the country, where water cannot be easily procured, it is highly important that the rain-water from the roof should be saved, and in many cases underground cisterns of a costly kind are constructed, out of which the water has afterwards to be pumped. This arrangement is both troublesome and expensive, and can be easily avoided. By purchasing one or more old oil butts, which can generally be had at the rate of one cent a gallon, and which usually contain 150 to 175 gallons each, and placing them on end under the centre stage, and by bringing a lead or tin pipe from the eave gutter, (as shown in the wood-cut annexed,) you can always draw the water from under the front stage or table by the faweett at B. If more than one cask is required, they can be placed nearly in contact and connected with a short piece of leaden pipe bedded in white lead.



I would also recommend that the centre stage should be boarded in entirely. It not only conceals a part of the house which is always unsightly, but it diminishes the volume of air to be heated almost one-half. By introducing a row of small lights in one of the risers of the steps at A A, sufficient light will be furnished for a good potting room, access to which can be gained by a sash-door at one end. I had a greenhouse built on the above plan some five years ago, and have found it to answer perfectly.

THE TOMATO TRELLIS.

BY J. NOOKS, OF GERMANTOWN.

Mr. Editor—I do not agree with your correspondent "Y" or yourself in reference to the condemnation of the "trellis" for tomato-vines. I grow them in no other way, and have had several years' experience, and am satisfied that I can and do raise as many and as fine tomatoes as any one else. The growing them upon the ground may produce fruit a little earlier, but it looks to me like a very slovenly way of gardening, even with the mulching, and to which I do not object. On the contrary, I think a heavy mulching of lawn grass for several feet around each vine, when grown upon the trellis, is of great advantage, particularly in the dry season,—it keeps down weeds and keeps the soil moist.

The trellis should be set at least five feet apart, so as to enable you to get through the space conveniently to pick the fruit, and while confining the main stems to the trellis, to let the laterals have their own way, and not to pursue the system of some persons who have a propensity for cutting and stopping, as they call it. Unless they get too rampant, it is better to leave them as much to themselves as possible, and, my word for it, you will have as fine fruit and as much of it, as in any other way, and without the trouble of stooping to pick it, or the necessary consequence of mashing the vines by treading on them. For field culture, I will admit that there would be a considerable amount of

labor, as well as expense, in using the trellis; but for ordinary garden culture for family use, give me the trellis in preference to slovenly gardening, and particularly as my experience proves that I can raise as many and as fine tomatoes as I want, and on as small a space of ground.

Your editorial remarks in reference to "Sun and Air" are correct. You will always find, that in growing tomatoes, as well as raspberries and grapes, that the finest fruit are nearly always covered by their own leaves, as if nature had intended to shield, and not expose them to either sun or air. These remarks may, perhaps, apply with equal force to other fruit, but my attention has been more particularly drawn to those named.

[In our remarks on ripening fruits, we referred to "Y's" tomato article merely as an illustration of the principle that it was not so much sun and air to the fruit, as healthy leaves on the plant, that was essential to ripening early and properly. Tomato culture, by itself, is still open for discussion, and we are glad to have our correspondent's views and experience.—Ed.]

CISSUS DISCOLOR.

BY MR. J. P. NORRIS, WEST CHESTER, PA.

Since you received my other communication, on "The Begonia," and were so kind as to publish it in your journal, I propose giving you a short article on the Cissus discolor.

The Cissus discolor fully equals, if not exceeds, in beauty any other variegated plant under cultivation. It is a tropical plant, and, therefore, to do well, must be kept in the hothouse; but it will do very well in a good greenhouse where the temperature never falls below 45°. Of course, when kept at such a moderate heat, it loses its leaves and the young wood is apt to die.

But even for persons not having a hothouse, it fully repays them by keeping it in a greenhouse, because early in the summer, when the temperature begins to bring forth the leaves, and it grows so rapidly that a strong plant will cover a stand three feet high in about three weeks.

It looks best when trained on a stand in the shape of a balloon, or on one of the shape of a barrel. The manner of making the latter was fully explained in a former number of the *Monthly*.

As it is the nature of this plant to make very long, thin shoots from very little old wood, it is rather difficult to get cuttings off of it. Cuttings taken from the young wood are liable to damp off, without they are taken great care of and kept under a bell glass. Now, the easiest way of all is to take a long shoot and peg it down in a three-inch pot filled with *river sand*, and continue pegging it down till you come to the end of the shoot. In about two or three weeks strong young roots will issue from every joint, and a week or ten days after the plant is rooted it may be separated from the old plant, and it becomes a fine, healthy young plant.

I have seen an old plant worked in this manner make about thirty or forty young plants. These young plants are more delicate than the old ones, and they will not stand as much cold as the old ones. Care must also be taken not to let them damp off, which they will do if kept too wet.

The Cissus discolor delights in a rich soil mixed with a little sand, *and must be well drained.*

I fear that I have trespassed too much on your space. and, therefore, I must close.

FLOWERING OF LAPEGERIA ROSEA.

BY MR. GIDEON H. SMITH, BALTIMORE.

I had the pleasure, on the 15th of September, of seeing this very interesting plant in bloom in the very choice collection of Edward Kurtz, Esq., of Baltimore. Mr. Kurtz succeeded in blooming it by placing it during the hot weather of summer in a dense shade, which seems to be its natural habitat. The great rarity of its blooming, at least in this country, gave it more interest, perhaps, than any great intrinsic beauty in itself, though it is not deficient in that. It is a plant of recent introduction to floral collections, having been carried to Europe in 1847 from Chiloe.

Mr. Kurtz obtained his specimens, through his enterprising friend, Captain Fitzgerald, of this place, from Chili, several years since, and by the means above-mentioned, has at last succeeded in blooming it. In the last Supplement of Loudon's Encyclopædia there is a very good engraving of the plant in flower. The flowers are somewhat lily-shaped, about four inches long, with six petals, three of which are obtuse, and three acute pointed alternately. and the three alternate petals half an inch longer than the others. The whole flower is rose-colored, thickly sprinkled with white macula, giving it a unique and beautiful appearance.

REPORT ON AMERICAN WINE.

BY DR. J. S. HOUGHTON.

The undersigned having been requested by the Fruit-growers' Society of Eastern Pennsylvania to

investigate the subject of American Wine-making, submits the following as some of the conclusions which have been arrived at.

1. No grape is suitable for making wine which will not produce, in the process of fermentation, sufficient grape sugar and alcohol to form a wine that will keep for several years in casks or bottles, without the addition of cane sugar and alcohol or spirits obtained from other sources.

2. Domestic wine, as commonly made, with the addition of two or three pounds of cane sugar to the gallon of grape juice, and three to six gallons of "pure spirits" or "high wines" to the barrel, is not a true wine; its use is injurious to the stomach; and the manufacture of such cordials and alcoholic mixtures should be discountenanced, as unworthy of a grape-growing country.

3. The first essential condition required in grapes, to make good wine, is that they should arrive at *perfect maturity;* that is to say, to such a state of perfection that they will not grow sweeter in a sensible degree.

It follows, therefore, that no variety of grape which does not attain this perfect degree of maturity, every year, in any given locality, can be depended upon to make wine, however high its wine-making qualities may be in other respects.

4. The leading wine grape of the Atlantic portion of the United States, at the present time, is the Catawba. This grape does not ripen with sufficient certainty and perfection to make wine, in any locality north-east of Maryland or north-west of Central Ohio, oftener than once in five years, except, perhaps, at Kelly's Island, near Sandusky City, Ohio.

5. We have not yet discovered or produced any other grapes than the Catawba and Clinton which can be profitably used for making wine. The Clinton is said to make fair wine; the Oporto Grape furnishes a port of doubtful quality; the Delaware juice forms a very agreeable wine, and is thought by some to possess the qualities of a true wine grape, but it is not relied upon by the wine-makers of Ohio as a profitable grape for this purpose. The Isabella Grape does not come up to the standard of a wine grape in several respects.

6. The only wines for general use that can probably be made in this country at present, are still, sour, hock wines, similar to the sour German and Hungarian wines, having barely sufficient grape sugar to keep them from becoming offensively sour, and a low per centage of alcohol. We have yet no grapes, in general cultivation, capable of making wines having the rich, saccharine, alcoholic and highly-flavored character peculiar to the fine wines of France, Spain and Madeira. Nor is it necessary to success in the making and using of wine as a common beverage by the people, instead of fiery and poisonous alcoholic liquors or badly made beer, that we should be able to make fine, rich wines. The light, cheap wines used by the people of France and Germany with such freedom and good effects as a daily drink, and at almost every meal, are almost identical in quality with the still Catawba made at Cincinnati and at Hermann, Missouri. This kind of wine is, in no respect, very injurious to the habitual drinker. It is slightly nutritious, assists in maintaining the natural heat of the body, quenches the thirst, promotes the digestion and assimilation of food, and, after one has become accustomed to it, is an agreeable and altogether refreshing and useful substitute for some other drinks in common use. It is not so irritating to the stomach as cider; it does not create acidity like the sweetened cordials called domestic wine; it is not so bloating and stupefying in its effects as lager beer, ale and porter; it is not so highly alcoholic as to produce intoxication when taken in any moderate quantity; it is not so disturbing to the nervous system and the liver (the bile) as coffee; and it is not. perhaps, more depressing in its action, when used immoderately, than strong tea.

Wine of this character has been made very successfully in Central Ohio and Missouri, in some of the Southern States, in Central America and California. The light wines of California have lately been much praised. But these wines have not yet been very commonly employed by the American people as a beverage. Occasionally we see them placed on the wine lists of our hotels, and the sign "Catawba Cobblers," we have noticed, has become quite common in the fashionable bar-rooms. But the people still adhere to their fiery and poisonous alcoholic drinks, to bad whiskey, adulterated and manufactured brandy, and drugged beer, and neglect the pure juice of the grape, to a very great extent.

There can be no question that the health and happiness of mankind would be greatly promoted if they would discard the use of any kind of wine (which must, of course, contain a certain amount of alcohol to constitute it *wine*,) as a daily drink or beverage. Some persons, indeed, are so unhappily organized, that they cannot take the smallest quantity of alcoholic wine or liquor into the stomach, without the most certain destruction to their health and happiness. But still wine, brandy, &c., are often useful as medicines, and are much employed

at the present time in our military hospitals as stimulants; and there are many persons who can use any and all of these alcoholic liquids pretty freely for years, without very injurious consequences. Mankind, in fact, seem perversely determined to stimulate and narcotize themselves, the world over, and it may be the part of wisdom to induce them to use the least destructive forms of stimulation. Hence, it may be advisable to extend the manufacture of light American wines of the character before alluded to, and to exert our influence to introduce them into common use as a beverage, in place of the alcoholic liquors, ale and beer, now so universally and largely consumed in this country. As an additional argument on this point, it may be stated that most of the beer and ale now made in the United States has a large quantity of cheap, and often bad whiskey added to each cask, in order to impart to these drinks the intoxicating quality generally demanded by the consumers.

7. As to the question of profit to be derived from the manufacture of light American wine, it is believed, that as a branch of industry, it is rather more profitable, where the grapes will ripen, than the cultivation of wheat and corn.

8. In relation to the probable capacity of the soil and climate of the United States to produce wines of a high character, equal, if not superior, to the best wines of Europe, and also in respect to the prospect that wine grapes, which will bear vineyard culture, of the proper quality to form such wines, will be obtained by hybridization or otherwise, no doubt is felt by those who are best informed on this subject. We have already numerous natural seedlings and hybrid grapes of great promise, not yet fully tested, and more are annually produced and discovered by our zealous cultivators. It is not, perhaps, fully settled that some locality may not yet be found in our widely-diversified Union, where the best wine grapes of Europe will grow with as much success as in the countries where they are now cultivated. It should be borne in mind that the wine grapes of Europe are not natives of the countries where they are now grown in vineyards; nor have the States of Europe any thing like the same number of native varieties of the grape that we have in America. So there is hope for American success in wine-making, as well as in the production of wheat and corn, and in all the arts of peace and war.

[The above report, adopted by the Fruit-growers' Society of Eastern Pennsylvania, contains some views seldom recognized by American wine-makers, and, on account of its merits and the importance of the subject, we have obtained permission from the Committee on Publication to publish it here in advance of their regular proceedings.—Ed.]

HEDGE PLANTS.

BY J. W. S.

In the October number of the *Gardener's Monthly* is a note on the rate of growth of the Osage Orange, which interested me very much. These and similar notes, the results of actual observations, and a record of facts observed, that frequently appear in the magazine, is to me one of its great merits. Though I knew the Osage Orange grew to the dimensions of a tree, I had no idea that the growth was so rapid. What I take the liberty of calling attention to is the remarks of your correspondent, that this growth unfits it for a successful hedge plant. I have heard the same remarks applied to the Honey Locust and other *trees*, that they are unfit, on this account, to make hedges of. Is this a fact? I am inclined to take the ground that no plant but a tree or strong-growing shrub is fit to form American hedges. To an American, more than to any other, is *time* money; and the great objection to shrubs is, that they take too long to form a perfect hedge,—in other words, they are too costly. Take, for instance, the Pyrus japonica. How long would it take to make a perfect hedge, say five feet high and four feet diameter at the base? Is eight or ten years too much? I think not. If so, it costs too much.

So with the Newcastle Thorn, Cockspur, Hawthorn, Buckthorn, Shœpberry, Holly, and almost every thing that I have ever heard recommended. They mostly take two or three years to raise them from seed, and after we have them raised, they take treble as many more to form any kind of respectable hedge.

I have long settled down to the opinion, that if we are to have any kind of fences but timber or stone ones, it is to be of Osage Orange or Honey Locust. These or no live fences at all. As to the objection that they are, by nature, *trees*, I regard that as no objection at all.

My chief reason is, that I know of some hedges of Osage Orange that have been, at least, fifteen years planted, that are models of what a perfect hedge should be; but they have been well attended to, and have not been allowed to grow to trees. The owners tell me that by cutting off the growing shoots, while they are growing, about twice a year, the disposition to grow into trees is utterly de-

stroyed. At any rate, after watching these hedges, and the doings of other parties with other proposed hedge plants, I settled down, three years ago, into the belief that there was nothing like the Osage Orange, and planted it entirely around my farm, and am, so far, perfectly satisfied.

One of my friends has a piece of hedge about one eighth of a mile in length, I think, and is, perhaps, twelve years old. It is about four feet wide at the base, about five feet high, and cut into a sort of rounded cone. No fence could be more perfect, or completely fulfilling its purpose. Those who notice, for the first time, how neatly it always looks, say that it must cost a ruinous sum to keep it in such good order; and I confess I thought so myself once, and was astonished when he told me it cost him the labor of but one of his farm hands twice a year,—one day about the first week in June, and one day about the end of July or early in August. He does not cut it with either shears or scythe, as I see often recommended, but uses a a grass-hook, as we call it here,—a sort of sickle with a sharp, scythe-like edge. The man goes up each side and "trims" off the green succulent shoots nearly as fast as he can walk.

The one who has had his hedge fifteen years is quite satisfied that it will last quite as many more, and is fully satisfied that when managed in time, and properly, it is the cheapest and best fence of any kind whatever.

With Honey Locust I have had no personal experience; but from what I have seen under other persons' care, have no doubt it will prove, in many cases, as good as the Osage Orange.

[Our correspondent is not right in classing the Buckthorn with his slow-growing shrubs. It is, in fact, a small tree, grows the first spring from seed, and makes a rapid and quick fence. We regard it favorably as a hedge-plant. His remarks, in other respects, we regard as just. There are no valid reasons against *tree* plants as fences, when trimmed at the proper season, which so weakens the arborescent growth as to make them become, in fact, but shrubs.—Ed.]

IS THERE FERTILITY IN THE STONE-COAL ASH?

BY WALTER ELDER, PHILADELPHIA.

I have always thought so, and recommended its application to lands. I have frequently spread it entirely over stiff soils in fall after digging them, and found them more mellow and with fewer insects the following years; have mixed it with other materials and applied it as a manure, and always got good crops after it. I have put it two and three inches thick on beds, and set my pot plants upon it, to discourage the roots going through the holes of the pots; but found out that it rather invited them; and when they got out, they grew so fast and made so many fibres in the ash, that they soon got matted as a grassy sod, and extended beyond the circumference of the pots, and held it so tightly that they could not be parted. These all told my mind that there was fertility in stone-coal ash after it got wet and decomposed, and two years ago I got my eyes opened to its full virtue. While improving a part of the grounds attached to the famous seminary of the Rev. Mr. Meigs, in Pottstown, a heap of stone-coal ash lay in the way and had to be moved. There was about ten cart-loads, or a hundred and sixty bushels. The heap was tidy, and thirty inches high, and covered with tomato plants growing upon it, which had sprung up spontaneously. They had the strongest vines and largest fruit I ever saw; yes, much more so than any I ever saw upon good garden soil highly manured. There were also growing among them two plants of Lamb's Lettuce and a plant of a wild Amaranthus, and each of these was seven feet tall and as bushy, with branches as much extended as a Fir tree seven feet tall. They were all wholly growing in the ash. Their roots did not reach the soil beneath the heap, and the heap had been there two years. The ash was partly decomposed, and although the soil was very dry, the ash was moist all through. There was nothing in it but, perhaps, house-sweepings, as all kitchen offal was put in the swill-barrel for the hogs. I am now fully convinced that there is fertility in stone-coal ash when decomposed.

[We are glad that Mr. Elder has mooted this point; for, there is little doubt, the prevalent impression amongst practical men, that anthracite coal-ashes are worthless, is an erroneous one. That it is of very little use when applied fresh from the ash-box, is probably true,—and yet instances of *old* ashes proving of service are not rare. Mr. Elder has, probably, suggested the reason, and the proper mode of applying them will yet be understood to consist in free turning over and exposure to the air for some time before using.—Ed.]

NOTES FROM MY SCRAP-BOOK.

BY E.

German Tradition.

Adam was standing in the Garden of Eden, when

an angel who had charge of the flowers brought them before him, and he gave to each its appropriate name. And when he had done with the flowers, he went away to give names also to the trees of the garden.

Then the Flower Angel slept in a bower of fragrant roses and jessamine; and Eve lay on the soft green turf beside a clear, murmuring brooklet. As she lay with half-shut eyes, thinking of the bright, beautiful new world in which she found herself placed, she heard a soft, clear, low—*very low*—voice close to her say, very mournfully, "Forget me not! Forget me not!"

Then she looked down and saw a small flower look up, with love in its beautiful blue eyes, repeating, mournfully, "Forget me not!"

Then was Adam called, and he perceived that the Flower Angel had overlooked this lovely, modest little flower, and he spoke caressingly to it and said, "Look up, forsaken one! Let the words thou hast spoken be thy name! A favorite shalt thou be in all lands, and in every tongue shalt thou be called Forget me not!"

German Method of Preserving the Color of Dried Flowers.

We dip the petals in diluted alcohol,—that is, equal parts of alcohol and water; let them dry and dip them again. The alcohol soon evaporates, and then the flowers must be spread carefully on soft paper, taking out all folds and creases in the petals. Cover them with the same soft paper, and press lightly until quite dry, changing the paper of the press every day. The colors, particularly the blue and purple, often fade at first, but but is soon restored.

This receipt is so simple that it is well worth trying, but I cannot answer for the success of the experiment.

The Origin of the Word Nosegay.

As to the latter part of the word nose-gay, or nose-gaude, as it was until lately called, it is so transformed, both in signification and sight, that no one but such a judicious writer and etymologist as Cleland would have traced it to its original meaning.

In his "Celtic Vocabulary," page 2, he says, Gaude or gay, as applied to nosegay, comes from the Erse tongue, in which geach signifies a bough, or bench of flowers to be held to the nose. Every judge, every councellor, and every sheriff had his bis, bough, wand, staff or rod of office, which varied in their forms according to the difference in their functions.

The nosegay now affected by the (English) judges is not, as is vulgarly imagined, a mere preservative against the closeness and want of proper ventilation of a crowded court-room, but it is a relic of that primitive and ancient custom which obliged the judge, councellor, and sheriff to hold in his hand the bough or sceptre of justice.

It was formerly called *boughet*, or little bough; whence came the French word bouquet for nosegay.

The White Clover.

By a Lady of New Hampshire.

There is a little perfumed flower—
It well might grace the loveliest bower—
Yet poet never deigned to sing
Of such an humble, rustic thing.
Nor is it strange,—for it can show
Scarcely one tint of Iris' bow.
Nature, perchance, in careless hour,
With pencil dry, might paint the flower,
Yet instant blushed, her fault to see;
So gave a double fragrancy:—
Rich recompense for aught denied!
Who would not homely garb abide,
If gentlest soul were breathing there
Blessings through all its little sphere?
Sweet flower! the lesson thou hast taught
Shall check each proud, ambitious thought;
Teach me internal worth to prize,
Though found in lowest, rudest guise!

German Method of Making Flowers Bloom in Winter.

We saw off such a branch of any tree or shrub as will answer our purpose, and lay it for an hour or two in a running stream or under a hydrant, the object of this being to thaw the ice from the bark and soften the buds. Then we carry it into one of our warm rooms, and fix it upright in a tube or box full of water. Fresh burnt lime is then put into the water, and allowed to remain in it about twelve hours, when it must be taken out and fresh water added, in which a very small quantity of vitriol (sulphuric acid) must be stirred, which will prevent its putrifying.

In the course of twenty-four hours the flower-buds begin to make their appearance, and afterwards the leaves. If more lime be used, the process is accelerated; while if not used at all, the leaves appear before the blossoms, and sometimes the flowers come not at all.

To Preserve Seeds for Transportation.

Let them be fully ripe when gathered and exposed for some hours to the sun. Coat them with a thick mucilage, either gum Arabic or common glue, quite cold. Let it dry on them and pack in such a way as to exclude the outer air and all dampness. When wanted, soak off the coating in cold water and plant immediately.

The Heartsease.

There is a little flower that's found
In almost every garden ground,—
'Tis lovely and 'tis sweet;
And if its name express its power,
A more invaluable flower
You'll never, never meet.

I said in every garden ground—
Perhaps in Eden 'twas not found—
For there it was not wanted;
But soon as sin and sorrow came,
This little flower derived its name,
By Mercy's agent planted.

He took its azure from the sky,
It is the hue of constancy—
And constant should our faith be—
He mixed it with the splendid gold,
To show that if our faith we hold,
We shall be crowned with glory!

[*Christian Florist.*

Potato Starch.

It is not so generally known as it should be, that starch made from the common potato furnishes an excellent substitute for arrow-root, as a wholesome, nutritious food for infants. It also makes a good cheap pudding for the table, if cooked like sago, and as it has not the medicinal properties of arrow-root, it is much to be preferred as an article of daily food, except for children who are subject to diarrhœa or summer complaint.

The process of making the starch is so simple, and the time required so short, as to put it into the power of every one having the means at hand. Wash any quantity of potatoes perfectly clean, and grate them into a tub half full of clean cold water; stir it up well; let it settle, and then pour off the foul water; put the grated potato into a fine wire or coarse hair sieve; plunge it into another tub full of clean cold water, and wash the starch through the meshes of the sieve and throw the residue away; or wash it again if any starch remain in the pumice; let it settle again, and repeat this process until the water comes off clear; scrape from the top any remains of the pumice; then take the starch out and put it on dishes to dry, and it will be fit for use immediately. When wanted for use, mix as much as may be needed in cold water, and stir it into boiling milk, or water, if preferred, and it requires no further cooking.

It also makes a stiff and beautiful starch for clearing thin muslins or laces, and is much less troublesome to manage than that made of wheat. —*American Agriculturist.*

Jute.

The new material spoken of in the English journals as a substitute for cotton in the manufacture of cloth for wearing apparel, is thus described in the *Library of Entertaining Knowledge* (slightly condensed):

"Corchorus olitorius, or Paat, or Bhangee, is a plant whose fibres are used for the purpose of making cordage in India. It is an annual plant, flowering in the autumn, and growing wild in many parts of India, but extensively and carefully cultivated in Bengal. Its fibres, for cordage, are known in commerce by the name of *Jute*. Under cultivation, its stem is round and smooth, its height from three to four feet. When wild it is short and branching. It has been called Jews' Mallow, because, in India, the Jews boil and eat the leaves with their meat; but this use of it is not confined to the Jews, for Hindoos and Mussulmans also cook and eat the leaves. It seldom grows more than four feet high, and shoots out many lateral branches, which render it difficult to separate the fibres from the woody parts. It is, in consequence, not considered very profitable for cultivation, and is only grown on small plots near the houses of some of the natives, and this more for the leaves and tender shoots for food than for the value of the fibres.* In preparing the fibres, the plant requires to be steeped in water much longer than hemp,—a fortnight or three weeks being scarcely sufficient for their maceration."

The "gunny bags," in which sugar and other commodities are brought from India to this country, are made of Jute.

Linnæus, in "Species Plantarum," gives the habitat of Corchorus olitorious in Asia, Africa and America. More recent authority says that Jute is the fibre of the Corchorus capsularis, which is indigenous in India only.

* This rather contradicts the previous statement, that it is "extensively and carefully cultivated in Bengal."

ROTATIVE CROPPING.

BY WALTER ELDER, PHILADELPHIA.

Rotative cropping is the last of the four branches of rotative culture, by which we get a greater amount of produce from a given space of land without additional labor. I will imagine that the whole is to be discussed, as each branch contributes to the benefit of the others. 1st. Rotative tillage; 2d. Rotative manuring; 3d. Rotative seeeding; and 4th. Rotative cropping.

1st. Rotative tillage is turning the soil right upside down in digging, so that the lowest part, which has been farthest from light and air, is brought up to them, and that which has enjoyed full light and air is turned farthest from them, making a new soil for each crop; and all seeds that have fallen upon the surface during the growth of the previous crops are buried so deep, that when they sprout, the young plants are unable to push to the surface, and rot and enrich the soil below, and there will be fewer seeds among succeeding crops; and in trenching, a portion or all of the subsoil and surface-soil are mixed, so far as it is prudent to do so. That makes a new soil also, and increases its strength to bear heavy crops, and a greater quantity of digestable food is prepared for the crops, providing the soil is well broken in the process. A digging-fork is useful for loosening the soil about perennial crops; but it cannot make a new soil for fresh garden crops, any more than a long-tined harrow can prepare lands for farm crops.

2d. Rotative manuring is applying different kinds of fertilizers to lands occasionally. Barnyard manure is a compound of many materials, and is good at all times, but it tells more effectually when other fertilizers are at times applied in its stead. It is the harmonious combination of various ingredients in soils that disintegrates their particles, and produces great results. Professor Stevens, in his essay upon manures before the Progressive Gardener's Society, two years ago, explained how special fertilizers produced large and early seeds and small stalks. Here, then, if we want early peas, beans, Indian corn, okra, &c., of dwarf habit, apply special manures,—guano, super-phosphates, poudrette, &c.; and to plants we wish to grow large without seeds, apply barnyard manures.

3d. Rotative seeding is getting a change of seeds from a soil of an opposite texture, or from a distant neighborhood, every one or two years. This is of vast importance to cultivators, although they do not all think of it. It matters little whether the seeds are all kernels or roots, if grown many years on the same soils and same neighborhoods, they will deteriorate, and the crops annually will become beautifully less, unless they get extra culture. It is the want of a change of seeds that makes people cry out, "The lands are run out!" Lands never run out where rotative culture in all its branches is properly practiced.

4th. Rotative cropping is making different kinds of crops follow each other upon the same spots, that are of opposite natures and are grown for different purposes. One crop will, in a given time, exhaust the soil of all that is suitable for its nature, and a crop of an opposite nature will luxuriate upon what its predecessor left. Crops that are grown for their seeds reduce the fertility of soils more than those that are used green. Rhubarb grows larger by having its seed-stalk annually cut out. Asparagus produces larger crops by picking off blooms or seeds while green; but as many crops are grown wholly for their seeds and fruits, they must be allowed to bear them. I will divide garden crops into seven different classes, and no individual should succeed another of its class, much less succeed itself, upon the same spot.

Class 1st. Artichoke, asparagus, rhubarb, sea-kale, horse-radish, &c. These may occupy the same spots for five years; the asparagus ten years, but no longer. It is a mistaken notion to let perennial crops remain many years. Fresh soils make fresh growths, and new plantations should be made two years before the old ones are removed. Young plants, like young animals, are more thrifty and look livelier than old ones, and need less care, and their flesh is more tender and wholesome, as is the case with young animals.

Class 2d. Beans, peas, Indian corn, okra, pepper, egg-plant, &c. As these all bear seeds, they should get no barnyard or stable-manures, as they would produce too rank a growth, making large stalks, and few seeds and fruits, and these would be later. They should succeed green crops, for which the soils were well manured when planted. If the soil is poor, guano, super-phosphates, poudrette, marl, lime, plaster of Paris, ashes, &c., may be applied advantageously.

Class 3d. Beet, carrot, potato, parsnip, turnip, parsley, salsify, radish, and other root crops. All these, except potato and turnip, do best after a crop for which the soil was well manured the year previous; but concentrated manures are particularly beneficial. Indeed, it is now supposed that potato and turnip do best on lands that were manured for the previous crops, so that the lands for them are deeply tilled and dusted over with special manures.

Class 4th. Cabbage of all varieties, lettuce and all salads, spinach, celery, onion, leek, &c. All these do best with large quantities of barnyard or stable-manures, as they are proportionally more tender according to the large sizes they attain, and are also more wholesome.

Class 5th. Melons of all sorts, cucumber, squash, tomato, gourd, pumpkin, &c. All these do well with large quantities of barnyard manures, except, perhaps, tomato, as well without. As they all bear fruits, some persons suppose that they draw largely from the soil; but I think that, as they occupy large spaces, and their constituents are all air and water, they do not reduce the soil much. The crops that follow them without manuring are generally large. [It surprises me to think from whence all of this class derive their watery constituents upon the burning sands and arid atmospheres of New Jersey; but then according to Prof. Mapes, there is always sufficient moisture in the atmosphere.]

Class 6. Sweet and pot herbs, including chives, sorrel, &c. The perennials of this class may occupy the same spot two years, and not longer than three years. Make new plantations a year before uprooting the old ones. The soil should be made very rich with barnyard-manure before they are planted, and again well manured for succeeding crops. They draw largely from the soil.

Class 7th. Strawberry, gooseberry, raspberry, currant, &c. The soil should be deeply tilled and well manured before planting any of this class. Strawberry may occupy the same space three years, but not longer; raspberry five years, not longer; gooseberry and currant seven years, not longer; new plantations should be made one, two, or three years before the old ones are dug up, or a small plantation might be made every year, that would keep a supply of fine fruits. Where Gooseberries and currants are grown in single rows around the garden beds, a few bushes may be dug out every year. Trench deep and manure heavy, and take a surface crop off one year, and then plant gooseberries where currants were, and currants where gooseberries were; and the same course can be pursued with peach and dwarf pear trees growing in rows around the beds; but surface crops should not be planted close to bushes nor trees.

In the Flower Garden rotative cropping will be of annuals, biennials, perennials, bulbs, tubers, ligneous and herbaceous.

First. Annuals draw most largely from the soil, as they grow faster and produce their seeds all in a few months; but if they are prevented from seeding, by nipping off their blooms as they fade, they they will not reduce the soil so much, and by that means they can be kept in bloom all the growing season; they need heavy manuring, and well do they repay it.

Second. Biennials take two years to bear seeds, and die off; but if prevented from bearing seeds by cutting off faded blooms, they last many years; they do not exhaust the soil so much as annuals do, but need deep tillage and plenty of manures.

Third. Perennials grow slow, and are long in getting to maturity, and then they bear but few seeds and reduce the fertility of the soil less on that account; but need manuring freely, and deep tillage, when they need curtailing, which will be every two or three years. The plants should be wholly dup up, and in planting put them in each other's places, so that no one will be set where it was. The soil should at such times be deeply trenched and heavily manured.

Fourth. Bulbs and tubers should not succeed each other; deep tillage and rich manuring suit them, They should not occupy the same spot more than two years.

Fifth. Ligenous and herbaceous plants should be rotated with each other where it can be done; but in digging up shrubs or roses, etc., to plant new kinds in their places, two bushels of the soil should be taken out and fresh mold substituted, and make different genera succeed others of opposite natures, as evergreens succeed deciduous; deep rooters shallow rooters; tall growers succeed low growers; trees follow shrubs and shrubs trees, etc., and upon all occasions stir the soil deep, pulverize and aerate well.

The lawn, when kept in short grass, annually top dressed with manure and weeded, and when kept in pasture and weeded, may lie twenty years; but if it is allowed to grow up to seed and make hay, six years is long enough time for it to lie; when broken up, the soil should be deeply ploughed and run the subsoil-lifter through it and manure it heavily, crop it with potatoes or turnips one year, but do not let a weed ripen its seed; then in fall or spring seed it down with a different kind of grass from that which was on it before, if it will suit.

The seed garden may have the same rotation as the kitchen garden; but those kinds that bloom at the same time, and whose fructifying influence affect each other, should be kept as remote from each other as the grounds will permit, so as to preserve every one in its purity.

Rotative cropping in pot culture is the taking

the plants out of the pots and removing as much of the exhausted soil about their roots as possible, and replacing it with fresh composts, and even putting the plants in other pots which have been washed and well aerated is of much consequence for their future health.

Gardeners should keep a good supply of seeds on hand and seedling plants to set out for second crops. As soon as one crop is past its prime for kitchen, remove it at once and dig the ground, and crop it when the weather suits, but never allow any crop that is used green to ripen seeds; never save seeds, as withered crops disfigure the garden and prevent the production of second crop. Never let flowers ripen seeds, but pick off blooms as they fade, and thus preserve the bloom all season.

I have found it difficult to get families to believe that it is economy rather than a waste to remove culinary crops when they get too old for kitchen use; heartless cabbages, lettuce and stringy radish, beans and peas with half ripened seeds are taken to the compost heap, decompose and are returned to the garden in due time, in the shape of manure; and in the process of decomposition, they imbibe fertilizing gases from the atmosphere, and fix ammonia from rains and these are all great gains; and that vegetable molds from garden refuse are richer in fertilizing essence than any other manures all skillful gardeners know.

And who does not prefer tender beets, carrots, turnips, radishes, &c., in fall and winter to the stringy and juiceless ones that have been too long in the ground, celery, lettuces, endive, late bush beans, pickling cucumbers, &c., are all second crops: how much better having them than leaving ripening crops to cumber the ground, and all for the fear of purchasing a few seeds. Let us put an end to the childish practice of saving seeds in a small way in a private establishment, and our gardens will be constantly green, and we will enjoy the luxuries which they will produce by a proper system of culture.

In the arrangements of crops, to young gardeners I say, don't grow any members of "Class Fifth" near to each other, as their fructifying influences affect each other so much as to injure their fruit.—I put each crop by itself, there is no economy in space, nor gain in products in sowing tall crops wider—to sow dwarf crops between them. Spinach ground is cleared in time for all crops of "Class Fifth." Lettuce, radish, cress, &c., are off in time for a second planting of bush beans and Indian corn. But planting late cabbages between the rows of early potatoes after the tops are full grown is a good plan, as the plants are shaded until well rooted, and when potatoes are dug up, the soil forming the ridges is spread over the roots of the cabbages, and gives them greater luxuriance.

But in the arrangements of flowers in large beds, the *Ribbon System* surpasses all others I have ever seen. I cannot find language to paint the matchless beauty of the arrangement; it must be seen to be known; the delightful enchantment it creates cannot be put in words.

NOTE.—I may be asked, if it is best to turn the soil upside down in digging, is it so in ploughing? I answer *no*; farm lands are ploughed many days, and sometimes weeks before they are cropped; and the furrows being laid upon an angle a greater surface is exposed to light and air;—which improve the condition of soils for cropping and give them greater fertility, and rains filter through them more readily, and there being vacancies below, the waters run off where there is a declivity; or if flat, and drained, the waters will soak more quickly in the drains andbe carried off.

Seeds of weeds will send up their plants to the surface after ploughing, while they could not do after digging upside down: but as they can be expeditiously uprooted by horse and cultivator, between wide rows and only need hand hoeing around the plants, they do not make so much labor as they would do in the garden where the whole surface has to be hand hoed; that again shows the advantage of Rotative cropping; all weeds among crops of wide rows can easily be kept from seeding, and crops of narrow rows following these, will have fewer weeds among them, and they will produce larger yields.

Farm crops may be divided into four classes namely;—

1st. Grains, flax and all that ripen their seed.

2d. Grasses, trefoils, &c., eaten green as pasturage or cut a fortnight before the seeds ripen, for hay; and second crop pastured.

3d. Turnip, beet, parsnip, carrot and all other succulent roots.

4th. Fruits, old orchards are becoming worthless and new ones are needed.

ROGERS' HYBRID GRAPE, No. 15

BY MR. E. S. ROGERS, SALEM, MASS.

DEAR SIR: Thinking you might like to see a specimen of some of the hybrid seedling grapes, which you have been kind enough to notice favorably at different times, I send to-day a bunch or two of No. 15, from a young vine growing in the garden of Mr. W. H. Harrington, of this place. The bunches sent are only of ordinary size, there being

many now on the vine larger, and they are grown without girdling, which I consider spoils the quality.

This grape Mr. Harrington considers the best outdoor one among his collection of all the best varieties; the vine was planted three years ago last spring, in the common soil of his garden, without any prepared border, and trained against a close board fence, which faces east or a little to the south, and has a Concord vine about fifteen feet in front of it which shades it somewhat; it is a week or ten days earlier than this Concord, and nearly twice the size in bunches and berries, and in quality far superior. Isabellas by the side of it are not near ripe.

The vine last year was allowed to produce all the fruit it showed, three and four clusters to a shoot, and ripened them perfectly, and it was thought that it would not bear again this season; but it came out as full as ever although it was not allowed to bear so much, and about two hundred and fifty clusters were thinned out after the fruit had set, and it was permitted to bear but one bunch for each shoot, which left about one hundred and fifty to ripen, of which those sent are a fair specimen. The season here is ten days later than last, but this grape will ripen its whole crop better than any other sort in the same garden.

[A bunch of first size, with large brownish-black berries, thick skin, solid pulp, and with a very perceptible taste of the Black Hamburg. Though, to our mind, not equal to some of our other native grapes in quality, it is so near "best," and so superior in other qualities, that we regard it as one of the most promising on the new list. The Ontario and Union Village have been considered our largest grapes, but they are no larger than No. 15, and considerably inferior in quality.—Ed.]

ON THE TREBIANA AND SOME ALLIED GRAPES.

BY MR. R. BUIST, PHILADELPHIA.

Mr. Editor: Herewith I send you specimens of the White Syrian and Trebiana Grapes. The reading portion of the Horticultural world are aware that these grapes have got into confusion in England as well as in this country. We are indebted to you for the introduction of the Trebiana, in 1849, which, after its fruiting, from a casual observation it was considered identical with the White Syrian. The same error has been committed by prominent English growers. They now cover the difficulty, and pronounce Trebiana *far* superior to the White Syrian. I do not by any means see the emphasis, but point out to you and your readers the difference in appearance, leaving quality to your decision; the wood of the Trebiana has a slight down upon it, the eye is more downy, the foliage on the surface you will perceive to be very smooth and oily; the under surface very rough and slightly downy; the bunch is large and very similar to the Syrian; the berry is more oval and has more amber color. The wood and eyes of the Syrian have very little if any down, the surface of the foliage is rough to the touch, and the under surface not so rough; in the growth and keeping qualities they assimilate.

I also present you with the Duretto. You will see the fruit is of a more greenish white color, and the seed separate more readily from the pulp; and to any person, except a very close observer, these three Grapes and the White Nice are much alike.

On the the 18th ult. I saw at the Boston Horticultural Exhibition, the Trebiana and White Syrian both marked the latter name. I called the attention of Mr. Barry and the late Mr. Reid to the difference, which they both readily admitted

I also send you the true Reine de Nice, which has a long tapering bunch, with a very large oval bright-red berry. I also lay before you the Akbar Khan, a very prolific bearer; berry large, round, white; bunch shouldered. I also call your attention to a specimen of the Black Ferrar, very late grape, with a long tapering bunch; berry large, long, oval, and of a dark red or nearly black color; I introduced this very from the South of France in 1841 or '42, and it was first fruited by Dr. Mitchell on Green Lane, Philadelphia, in 1844; was then dug up by him and condemned as worthless; it has recently been brought into favorable notice. These Grapes have all been grown in our grapery of foreign vines, under very ordinary culture and without fire heat, which will give you a fair criterion of their quality and lateness, in which I know you will do justice to your readers.

[The Trebiana, above referred to by Mr. Buist, was obtained of Mr. Tillery, from the Duke of Portland's original vine, and there can be no question of its genuineness. The differences are just as Mr. Buist points out,—but there the matter ends, for we question whether more than one in a dozen would detect any difference in flavor between this and White Syrian, unless their attention was called specially to detecting a difference. Both Duretto and Akbar Khan have a flavor also as near as possible White Syrian, without being actually alike. The last is the larger berry, but all too much resembling one another. Of the actual merits of the grapes, as good fruit, we may say they were very fine indeed. The Black Ferrar was not among those sent.—Ed.]

The Gardener's Monthly.

PHILADELPHIA, NOVEMBER, 1862.

☞ All Communications for the Editor should be addressed, "Thomas Meehan, Germantown, Philadelphia," and Business Letters directed to "W. G. P. Brincklor, Box 406 Philadelphia."

☞ Persons sending two new Subscribers for 1862 in addition to their own, with $3.00, can receive a copy of our First Volume, (1859) free. All persons who have paid their subscriptions for 1862, by sending two new Subscribers and $2.00, can receive a copy of the same.

TO ALL OUR SUBSCRIBERS,

It is the part of wisdom to look forward at possibilities and prepare for such events.

Thousands of our neighbors have gone to the war. How many of these are our subscribers? How many of them will be left to us on the first of January, when our new term of subscription commences? No one can answer these questions.

Some of them, we know, are gone, and it is, therefore, a certainty that our present list will be reduced. Will the new subscribers that our friends always obtain for us equal these losses? Perhaps so—perhaps not.

This much is certain: we cannot afford a greatly reduced list, and we feel equally certain the *the Monthly must be continued.* The editor, not depending solely on the *Monthly* for support, will stick to his post, if not one cent of remuneration accrues to him for the many hours of hard labor he will have to spend on it. Those who have gone to the war, to preserve to us all that we and they too value, have a claim on us to preserve for them, at a sacrifice, if need be, whatever they cherished while still with us. We feel, therefore, an obligation to them to sustain the magazine for their return, as well as for the pleasure and profit of those who remain. Our labor we will cheerfully sacrifice; but of our cash means we have none to spare. Several of our friends, who feel as we do, have nobly offered, in case we meet with such a difficulty, to sustain us by a subscription. This, though we fully appreciate the kindness, we decidedly object to; for we would not start the year at all if we felt we had not ample means to carry it through to the end of the term subscribed for.

What we propose to do is this. In case our list is so low on the first of January that we should not feel justified in going on as it is, we shall raise the price to $1.50 for the current year.

We do not want *subscriptions* now, but we should like, as early as possible, to have the *names* of all who will, in all probability, be subscribers next year. Those who prefer to save trouble and send their subscriptions with their names, can send either the $1 or $1.50, as they prefer. Fractions of a dollar can be remitted in stamps or the new postage currency.

In case of an advance in price, we will send the paper for eight months to those remitting $1, and for twelve months to those sending $1.50. If no advance is made, they will receive it for twelve and eighteen months respectively.

It is to the best interest of our magazine, and the interest of horticulture generally, that we continue at $1, as it gives us the great circulation which makes our advertisers use our columns so freely as they do; and we shall very much regret if we have to raise the price to even so small a figure as $1.50. We, therefore, hope our friends will do their best to send us as many names as possible before the first of the year.

If, by the exertions of our friends, our subscription list is maintained at its *present standard, we shall not increase the price.* Our only aim is to continue its publication without actual loss.

KEEPING FRUIT THOUGH WINTER.

How to ripen fruits, is a branch of pomological knowledge as important as how to grow them; yet it is one very little understood. It is questionable whether this knowledge can be taught; for experience shows that no rule is applicable to all varieties alike,—for some apples and pears are improved by being taken off the trees before they are ripe, while other kinds are best when left on the tree as long as possible.

With regard to apples and pears,—kinds of fruit most generally understood when we talk about preserving fruits,—the fall fruit, for the most part, are best gathered a few days, or, it may be, a week, before they would drop of their own accord from the tree; while others ripening at the same season are best left on until they will scarcely bear their own weight without falling. The Bartlett Pear, for instance, may be gathered at least two weeks before apparently ripe, and will mature well in a cool, shady place, and, to some tastes, be even better for it; while the Duchesse d'Angouleme is ruined by what, in the same instance, would be called premature gathering. All these nice points have to be practically determined,—and the only safe general rule can be given that when a fruit

will part readily from the tree when gently lifted; or, when the seeds inside are of a deep black color, the crop may be gathered and stored away.

In most cases, by far too many fall-ripening varieties of fruit are planted. If the orchard be intended to supply family consumption, the crop will not keep till all is used; and if for market purposes, many will rot before purchasers are found for them; or more important duties have to be neglected to give attention to them. Where a great abundance of fall fruit exists, and it is desirable to keep them as long as possible, they should be gathered before fully ripe, just as the seeds are changing color, and kept in a cool, dark, room,—one not too dry, however,—until they can receive attention.

This coolness and darkness is moreover the main secret of keeping fruit of the winter ripening kinds through to their proper season; and it is in endeavoring to find the exact conditions that so many fail. If too dry they shrivel—if too hot they prematurely ripen and are worthless—if too damp they rot; and if too cold they are tasteless and insipid. To just hit the mark is not easy to a beginner, and yet in practice it is found—not so difficult as it appears to be. Some house cellars are so constructed as to be just the suitable thing; but the majority usually border on some one of the extremes we have noted.

Probably the best plan for the apple where the fruit is perfectly sound, is to carefully hand pick the fruit, and pack them gently in flour barrels, being careful not to bruise them in the least, either in filling the barrels or in handling them afterwards.—In this way they will keep in cool cellars that are tolerably dry, when in the same cellars they would probably shrivel on open shelves. Where the fruit are subject to the depredations of the apple moth, or to fungoid diseases, this plan is liable to objections, as the injured fruit will decay, and is difficult to get at inside the barrels; and if not taken out in time a considerable portion of the fruit will be destroyed by the heat evolved in putrefaction. The English fruit rooms, which are mostly constructed more with an eye to perfect fruit preserving and ripening than to economy of arrangement however, are usually made expressly for fruit, and all gardens of any pretentions have the fruit room as regularly as the tool shed. They are usually built on the north side of a wall or other buildings, in order to secure a regular temperature.—The walls are thick to ensure against frost penetrating them and many of them have a roof of straw thatch which tends still more to keep out frost, and a regular natural temperature inside—along all four sides of the building are tiers of shelves, arranged one above another, like the sleeping berths of a ship, and on these boards are spread the fruit in thin layers—usually but one course thick. Some of them have ventilation provided both from below and above; but those we have seen were not thus arranged, and there were no means of communication with the external air beyond what the doors and windows afforded. In these rooms apples and pears kept perfectly, ripening in succession, according to their season, and some of them keeping till apples and pears came again.

The secret of their success undoubtedly is the keeping up of a natural temperature of between 40° and 50°.

In our climate this arrangement would not answer. The severity of the winters demand more protection from a low temperature than the strongest walls would alone afford. Where a dry gravelly bank is at command, a room could be constructed, part beneath the surface, and part above—the exposed part covered with the earth thrown out from below; which would made a fruit room to perfection.

After all the keeping of fruit on a large scale, is not within the wants of most of our readers, who have but a few bushels, and in whose eyes a special fruit house would not be warranted by the small quantity to be kept. There is then no alternative but to make the best use of the facilities cellars, rooms or out-buildings afford; and for this barrels, boxes, cupboards and enclosed cases must be called into requisition; being careful to ensure a temperature of about 40° to 50°, not too damp or dry, and if somewhat dark the better.

Scraps and Queries.

☞Communications for this department must reach the Editor on or before the 10th of the month.

☞The Editor cannot answer letters for this department privately.

Plant Cases.—*A Correspondent from Peoria, Ill., October 1st.*, writes:

Permit me to trouble you with a few inquiries, which you can answer or not, just as you choose.

I have been in the habit of keeping a few plants in my house, (having no greenhouse or conservatory) such as Pelargoniums, Roses, Fuchsias, Camellias, &c., but wish to grow them better than I have heretofore been able to. Should like to inquire if you have any knowledge of growing

such in tight cases, how they succeed, or if there are any other plants that do better in cases, and what they are? I wish to put about 24 plants in a case.

Would bottom heat be an advantage in growing and flowering? To conclude, in your opinion, would the greater success in growing and flowering plants in cases to one fond of them be satisfaction sufficient to justify the expense.

My apology for troubling you is that although I have "Wardian Cases and how to grow indoor plants" and other works, they do not give me the information I want.

I have written to a Mr. Daniels of your city, who makes such cases, I think it doubtful if he answers me, as I wrote him in June last and got no answer, and it is getting late and I have no time to lose.

I take your *Monthly* as do several others here and highly value it.

[All the plants named, or any plant will do pretty well in cases properly constructed,—certainly better than in the dry air of a sitting room; and in our opinion the difference in their health and beauty will fully justify the expense. Ferns and the variegated leaf plants, however, are better adapted to close cases than the class of plants our correspondent writes of. The plants will require as much light as it is possible to give them, and altogether we could not do better than refer our correspondent to the article of Dr. Jack, which we gave a few months ago, and which we think covers the whole enquiry. If there be any point still obscure, we shall be glad to aid in explaining it.

With regard to Mr. Daniels we will venture an excuse for him. We know him to be as obliging and accommodating a man as there is in the trade, but a business man's time is valuable; and where he is actively engaged in business a half hour each spent in writing letters of advice for a number of correspondents, is more time taken from his business than he can afford.

We know at least in our own case, that if we replied privately to the numerous applications for advice that reach us, we should have no time to give to any business whatever. Yet we never lay aside such letters without regret that it is out of our power to comply with our correspondents' expectations.]

Fruit in N. E. Pennsylvania.—*A Wilkesbarre Correspondent* writes:

"We have had an abundant crop of fruit, such as Plums, Peaches and Apples. Grapes are not so good a crop, the leaves have fallen prematurely from many of the vines and the fruit rots and wilts probably from the heat and drouth.

Some of the peaches were inferior in size and quality. My poorest were Tillotson (which in some seasons have been very fine) and Early York. Best were Cooledge and Susquehanna. My Dwarf Pears are very fine but have not got as much of a crop as I would have liked, and I think that Flemish Beauty is a little ahead of any thing I have ever eaten."

[The wilting, shanking or shrivelling, as it is variously called of grapes, is probably owing to the injury to the leaves in all cases, sometimes bad roots produce sickly leaves, sometimes the leaves are injured by infavorable weather, unfavorable treatment or insects; in any case when the leaves suffer the fruit is apt to wilt.]

Mailing of the Magazine.—Will the Editor of the *Gardener's Monthly* state in his next number at about what date of the month is the *Monthly* published? Also, on about what day is it mailed to Northern subscribers. It should reach us before the middle of the month.

What is the price of the *Monthly* prepaid by mail? Montreal.

[The Editor is in no way responsible for the prompt appearance of the magazine. He is employed by the publisher and proprietor to prepare and overseer—that is to edit the work. The credit of all the other departments is due to the publisher. With reference, however, to the appearance of the *Monthly*, the publisher states that most of the delays complained of, result from the advertisements. His notice to advertisers is that "none will be received later than the 20th of the month," which most advertisers construe to mean that *none are required* until the 20th. Thus after that date he frequently has to set up *nearly the whole advertising sheets*, and when that occurs the magazine can scarcely be got ready before the 1st, and thus reaches subscribers at various dates from 3d to the 10th of the month, according to distance from the place of publication.

To remedy this, he proposes next season *to receive no advertisements after the 15th of the month, instead of the 20th as heretofore.*

The *Monthly* by mail to any part of the United States is 6 cents per year, paid quarterly in advance; Canada postage in the United States is 12 cents, postage beyond cannot be prepaid.]

Rare Hardy Evergreens—*A Subscriber, Baltimore.*—Please oblige several subscribers in this

neighborhood by giving them a list of 18, 20 or 24 of the *newer rarer* Evergreens trees that your knowledge would enable you to say were beautiful, distinct one from the other, and hardy in this latitude. By giving a select list from the hundreds now offered in the catalogues, you will we think greatly subserve an important public interest with your experience.

[1 Abies Menziesii.
2 Abies Orientalis.
3 Abies Douglasii.
4 Thuja Meldensis.
5 Cephalotaxus Fortunii.
6 Cryptomeria japonica.
7 Cupressus Lawsoniana.
8 Picea pichta.
9 Pinus Pyrenaica.
10 Pinus ponderosa.
11 Pinus excelsa.
12 Thujopsis borealis.

All of the above are very distinct, even while young. The following resemble some of the above when young, but differ as they grow older, and are very desirable.

13 Abies cœrulea.
14 Cephalotaxus drupacea.
15 Picea Cephalonica.
16 Picea pinsapo.
17 Picea Nordmanniana.
18 Pinus Banksiana.
19 Pinus Benthamiana
20 Pinus Pallasiana.
21 Pinus Lambertiana.
22 Pinus laricio.
23 Pinus mitis.
24 Pinus rigensis.

Grape Vine Thrip—"*Insects.*"—We are not able to say what species it is to which you refer, as we believe there are many different species, all alike equally destructive. The most common, as we think, is the *Tettigonia Vitis* of Harris. Under glass they are easily destroyed by tobacco smoke—a light dose being given two or three nights in succession. In the open air, Mr. Grider's plan of carrying a lighted torch, and shaking the vine after dark, would no doubt do much towards relieving you of the pest.

"Uncle Reuben"—*C. P. A.*—"Can you tell me of any plant of this name known to you, and used as a vegetable? I suppose by its name it must be an old English Herb."

[We have never heard of such a herb, perhaps some of our readers have. Runkelreuben is German for Beet root, possibly this may have some connection with our correspondent's inquiry.

Richardson Raspberry—*C.*—Beyond the bare fact of there being a kind of this name cultivated at the West we know nothing of it.

Names of Plants—*J. A. P., Chicago, Ill.*—Your friend is right, Except that the spelling is *Phygelius* capensis, instead of "Fugelia." It is a hardy greenhouse plant.

Express to Germantown.—Parties sending parcels to the Editor, are requested to mark them, "From Philadelphia to Germantown by Pownall's Express." We can well recommend this line to all parties sending to any one in Germantown. Office, No. 9 South Third Street.

Books, Catalogues, &c.

The American Journal of Science and Arts for September, by Prof. Silliman, contains as usual, much matters of general interest, besides the articles on the various branches of abstract science, for which it it so well known.

The article on the Ancient Lake Habitations of Switzerland is by no means the least instructive of this class of study. It is generally known that before the use of iron was known to the inhabitants of the earth, the habits of man were correspondingly different from what they have been since.—Wild and ferocious animals particularly abounded, and the safest place for the human race was on the water. Houses were built on piles over lakes, and altogether 68 such villages belonging to this period have been discovered in Western Switzerland, with a population estimated at 31,878. A few years since the waters of several of the Swiss lakes fell to an unusually low level, and advantage was taken of this by the Swiss archæologists to examine the sites of these old lake villages, and from the materials collected put together a theory of the habits and methods of living of these above water inhabitants.

Speaking of the fruits found, Dr. Lubbock, says:—

"Carbonized Apples and Pears have also been found at Wangen, sometimes whole, sometimes cut in two, or more rarely into four pieces, which had evidently been dried and put aside for winter use. The apples are more frequent than the pears, and have been found not only at Wangen, but also at Robenhausen in Lake Pfeffikon, and at Concise in Lake Neufchatel. Both apples and pears are small and resemble those which still grow wild in the Swiss forests. No traces of the vine, the cherry, or the damson have yet been met with, but stones of the wild plum and the Prunus padus have been found. Seeds of the raspberry and blackberry and shells of the hazel nuts and beechnuts occur plentifully in the mud.

From all this, therefore, it is evident that the nourishment of the dwellers in the Pileworks consisted of corn and wild fruits, of fish, and the flesh of wild and domestic animals. Doubtless also milk was an important article of their diet.

The list of plants found in the Pileworks stands as follows:—

Pinus abies.	Corylus avellana.
" picea.	Prunus spinosa.
" sylvestris.	" padus.
Quercus Robur.	Rubus idæus.
Fagus sylvaticus.	" fruticosus.
Populus tremula.	Wheat.
Betula alba.	Hordeum distichum.
Alnus glutinosa.	" hexastichon.

Trapa natans.—This species was supposed to be extinct in Switzerland; but, as M. Troyon informs me by letter, it has recently been discovered in a living condition. It has, however, become very rare.

Flax, Hemp, Juncus, Arundo."

The whole article possesses a rare interest to the students of the history of the human race.

The article on the Phosphatic Guano Islands of the Pacific Ocean, by J. D. Hague, is a description from a scientific pen of the guano deposits of this region. The theory and nature of the deposits are entered into, as well as the organic remains found in them are fully described. The vegetation of these islands consists mostly of purslane and grass. "Near the centre of Howland's Island are one or two thickets of leaf-less trees on which the birds roost. The tops of these trees are apparently dead but the lower parts near the roots shoot out after every heavy rain. Bits of pumice and pieces of driftwood are scattered all over the surface."

Of the birds, to which the guano formations owe their existence, Mr. Hague says:—

"*Birds, etc.*—From fifteen to twenty varieties of birds may be distinguished among those frequenting the island of which the principle are Gannets and Boobies, Frigate Birds, Tropic Birds, Tern, Noddies, Petrels, and some game birds as the Curlew, Snipe and Plover. Of terns there are several varieties. The most numerously represented is what I believe to be the Sterna Hirundo. These frequent the island twice in the year for the purpose of breeding. They rest on the ground, making no nests but selecting tufts of grass, where such may be found, under which to lay their eggs. I have seen acres of ground thus thickly covered by these birds, whose numbers might be told by millions. Between the breeding seasons they diminish considerably in numbers, though they never entirely desert the island. They are expert fishers and venture far out to sea in quest of prey. The Noddies (Sterna stolida) are also very numerous. They are black birds, somewhat larger than pigeons, with much longer wings. They are very simple and stupid. They burrow holes in the guano in which they live and raise their young, generally inhabiting that part of the deposit which is shallowest and driest. Their numbers seem to be about the same throughout the year. The Gannet and Booby, two closely allied species, (of the genus Sula,) are represented by two or three varieties.—They are large birds and great devourers of fish which they take very expertly, not only catching those that leap out of water but diving beneath the surface for them. They are very awkward and unwieldy on land, and may be easily overtaken and captured if indeed they attempt to escape at all on the approach of man. They rest on the trees wherever there is opportunity, but on these islands they collect in great groups on the ground where they lay their eggs and raise their young. One variety, not very numerous, has the habit of building up a pile of twigs and sticks, twenty or thirty inches in height, particularly on Howland's where more material of that sort is at hand, on which they make their nest. When frightened these birds disgorge the contents of their stomachs, the capacity of which is sometimes very astonishing. They are gross feeders, and I have often seen one disgorge three or four large flying fish fifteen or eighteen inches in length."

As wherever the foot of man treads, so here the rat is found, and now so numerous that the author of the paper had known over 3,300 to be killed in one day by a few men employed for the purpose.—"On Jarvis's Island they were probably introduced from a wrecked ship 30 years ago."

The article is rather long; but all those who value original and instructive reading, in connection with the all important guano subject, will get the "Journal" and read it for themselves.

Drs. Engelmann and Asa Gray's enumeration of the Plants of the Rocky Mountains, by Dr. Parry, is still continued. We notice no new trees in the list—the newer plants are mostly Gentians, Primulas, Pulmonarias and other alpine forms of vegetation.

The Atlantic Monthly for October is more than usually interesting to the lover of rural topics.

"House Building" is a sharp but just criticism on the Modern Style of American Houses. The house that forces your passing attention will probably not be in good taste. "Why, there is *an old house* that I never saw when passing here before," said a drover of a new house recently erected, gives a hint of the authors idea of what a tasteful house should be; and we think with him.

"Autumnal Tints" is seasonable and pleasing,—well written, imaginative and playful,—leaving

only one regret after reading, that there was not more of it to read. Of the Elm the writer says:—"What is the late greenness of the English Elm, like a cucumber out of season, which does not know when to have done, compared with the early and golden maturity of the American Tree?" We trust, however, his pen will follow the example of the despised Elm, and maintain a perennial and refreshing greenness, which, not knowing when to have done, will engage itself on similar sketches hereafter.

Patent Office Report for 1861.—This was prepared under the supervision of the former Commissioner of Patents, I. D. Holloway, and for which we are indebted to the present head of the Bureau of Agriculture, Hon. Isaac Newton.

There is more than the usual proportion of Horticultural matter in the present volume. Dr. J. A. Warder has an article on Raspberry Culture, which is we think one of the best and most complete articles on Raspberry science and practice we have read. The same writer has a chapter on the Strawberry, which has given us some amusement.

Some years ago the Cincinnati Horticultural Society published a series of 8 postulates on the Strawberry, for the assent of the Pomological world, to which all who valued an orthodox reputation in pomology, were required to submit. The Doctor now admits that postulates 5 and 6 are very shaky indeed, and that "proposition No. 7 may well be somewhat modified."

Friend Warder, has got no shadow of doubt to cast over "No. 3," on the faith in which some pretty severe anathema were hurled at the writer of this sketch, but we shall look for this "modification" also in good time.

Dr. Warder has also an excellent article on the Pear.

There are other chapters on "The Grapes of Kelley's Island." Grape Culture by Dr. Geo. P. Norris, W. Saunders and J. F. Weber—the last essay including wine making. Orchard Houses, by Dr. Norris. Fruit Culture, by Dr. Eshleman.—Insects, by S. S. Rathvon, are amongst the most interesting we notice.

Catalogues.

Spooner & Parkman, Jamaica Plains, Mass.—Hardy Bulbs and Herbaceous Plants.

Frost & Co., Rochester, New York.—Fruits and Ornamentals.

Isaac Pullen, Hightstown N. J. Fruit and Ornamentals.

Edward Tatnall, Wawaset, Wilmington, Del.

Descriptive Catalogues.

E. Moody & Son, Lockport, N. Y. Wholesale List.

D. Brinckerhoff, Fishkill Landing, New York. Wholesale.

Sheppard & Seward, New York City. Bulbous Roots.

Prince & Co. Strawberries.

Hoopes & Bro., West Chester, Pa. Wholesale List.

D. S. Dewey, Rochester, New York. Colored Fruits Plates.

John Murphy, Dansville, N. Y. Wholesale.

J. P. Lovekin, Newcastle, C. W. Wholesale.

G. W. Campbell, Delaware, O. Grapes.

A peculiar feature in this catalogue is the scathing of some "honorable" customers, whom it disposes of by name.

Jonathan Huggins, Woodburn, Ill. Fruit and Ornamentals.

Mr. Huggins has been a good friend to the *Gardener's Monthly* in his day, and we are glad to find, by his improving annual Catalogues that he is reaping a rich reward.

New and Rare Fruits.

Hale's Early Peach—*A Correspondent from Welshfield, Geauga, Co., O.*, confirms the good character of this fruit, we have before referred to, in our journal. He says:—

It is now considerably well known through Northern Ohio, and is common in the nurseries. It is the most popular early peach here known.

I am not competent to write a notice or description of it now for publication, for I have not its history, and have only fruited it for two years under very unfavorable circumstances, but I will say that it is a white fleshed peach of good size, (perhaps large), equal to any peach in cultivation in quality, and from 10 *days to two weeks earlier than Serrate Early York.*

It is said also to be a fine bearer, as I know it is an early one. The tree is a healthy, good grower; the fruit is of fine appearance, and I do not know of a single fault pertaining to either fruit or tree.

Adirondac Grape.—Specimens from J. Bailey, Plattsburg, New York. This is a grape of a class in which there are very few good ones yet,—

such as Union Village, and others that have large berries, and a thin juicy pulp. It is certainly *one* of the best of that class—perhaps the best—and we shall be glad to have specimens next year from other and more southern localities.

A Productive Pear Tree, *by E. B. Good, Manchester, Pa.*—We sent you to-day by express a few specimens of the "*Gipe Pear*," a seedling originated in York County, Pennsylvania. The original tree is as near as can be ascertained a century and a half old and of gigantic proportions, the stem measures 12 feet 3 inches in circumference, 11 feet from the ground, and its gigantic branches spread 60 feet, the tree is about 60 feet in height.—The seed is said to have come from Europe. Large branches have died off this season, Mr. Gipe, now living on the farm, says, the tree had seventy-five years ago 30 bushels of pears on, since then it had from 65 to 100 bushels in one season. Can this be beat? It is a regular and abundant bearer in season from Oct. to Dec. Please make a note of their quality through the *Gardener's Monthly*.

We also sent a few specimens of Sweet Potatoes, which were introduced here a few years ago; they astonished the world, skin red, flesh yellow, tubers very large, what do you call it, they produce three times as much from a given space as the Nansemond.

[It is a very good pear, of medium size, and fully equal to the average of the Bergamot class of pears ripe at this season.

The Sweet Potatoes seemed only large specimens of the Red Jersey variety; but they were large—Dominie Sampson, would say "pro-di-gi-ous." One of our laborers remarked that "no one could 'shut his eye up,' by making him 'belave' they were 'swate per-taters.' He insists they are 'Mangel Wurtzel beets.' same as he saw in the 'ould country.'"]

Domestic Intelligence.

Death of Mr. Wm. Reid, of Elizabethtown, N. J.—This well known horticulturist died on the 8th of October, in the prime of life, and in the meridian of usefulness. Few men in the Nursery trade were so well known, or so universally respected,—indeed we might almost say beloved. His nursery was a model in every respect, and had few equals in good keeping and neatness in this country.

The following sketch is by one of his brother nurserymen, who has known him intimately for a great many years:

"Departed this life, on the morning of the 8th of October, 1862, in the 58th year of his age, Mr. Wm. Reid, Nurseryman, of Elizabeth, N. J.

"In this sad and sudden occurrence, how truly is the saying verified, 'in the midst of life we are in death.'" He was present at the National Pomological meeting in Boston, on the 17th, 18th and 19th of September, and appeared to be in perfect health. He complained, indeed, of a peculiar pain or sensation in his right side, but, returning to his home on the 20th, he continued at business till the 26th, when he had an attack of paralysis, which deprived him of the power of speech, and he lay silent till the spirit passed away.

"Mr. Reid, (whose father was an agriculturist, and occupied the farm of Scotchton House, near Dundee, Scotland), came to this country when a boy, and shortly afterwards entered the employ of Mr. Wilson, Nurseryman, on Murray Hill, New York city. After some years of labor and study, he entered the service of a gentleman in Throg's Neck; subsequent to his engagement there he made several business visits to Georgia and Alabama. On Mr. Wilson's decease, about 1834, he became the principal proprietor of the Murray Hill Nursery. With him originated the beautiful Weeping Peach. His business was so prosperous that in 1837 he purchased a considerable property at Elizabeth, and, in 1849, removed to that place; he added to his possessions there year by year, until he brought his Nursery to its present extent and perfection. Here he found a field for the display of his tact, industry and professional skill, which have made his nursery a gem in culture, concentration and accuracy, and have placed it in our judgment at the very head of such establishments.

In his personal character, Mr. Reid was cheerful and affable; a loving husband, a kind parent and an affectionate brother. Although his industry and good judgment have provided well for his family, they will greatly miss the genial presence and warm affection of the departed brother and father; while in their sorrow, they have the sympathy of all who knew him, and especially of the nurserymen and pomologists of the New World, who, in his death, have met with a heavy loss. His clear, practical observations, always brief and accurate, were listened to with intense interest, whilst the grounds under his care are worthy of the study and imitation of all. He excelled in word and deed. During an intimacy of nearly thirty years, the writer has found in Mr. Reid great uprightness of character and an un-

bounded kindness of heart, and now sadly and affectionately offers this humble tribute to his memory.

"Mr. Reid was a member of Dr. Magies' Church, in Elizabeth, and his remains lie in the Evergreen Cemetery of that place. R. B.

Philad'a., Oct. 17, 1862.

General Isaac I. Stevens, killed in battle on the first of September, in Virginia, was distinguished in several branches of Natural Science. Physical Geography particularly suffers a great loss by his death.

Remedy Against the Apple Tree Borer.—On visiting the farm of Mr. Kenrick, of Dover, Mass., a few days since, our attention was attracted to one of the finest apple orchards that we have ever seen of its age—ten years from the nursery. Noticing the freedom of the trees from the borer, we asked Mr. K. what mode he adopted to keep off that insect. He stated that he kept the ground under cultivation, generally planting it to potatoes, and at the last hoeing—the last of June or first of July—he had a mound of earth raised around each tree, to the height of seven or eight inches. When the beetle comes to the tree to deposit its eggs, it places them on the bark just at the surface of the earth, not being able to get at the tree nearer the roots. In the fall, the earth which had been drawn round the tree is hauled away, leaving the part attacked by the borer in plain sight, and as the larvæ have made but a slight entrance, they are easily destroyed.—*Boston Cultivator.*

Preserving Flowers in Sand.—Those of our readers who attended the late Horticultural Fair in this city, did not fail to notice those two framed wreaths of natural flowers that hung upon the wall near the horticultural tools. They were the admiration of all, and many times did we hear visitors wondering by what process they were thus preserved in their natural form and color. It is this:

Get the finest and whitest of river or lake sand, wash it so clean that the water when flowing from it will be pure as if from the well. Heat it very hot and while hot mix it thoroughly with stearic acid in the proportion of one lb. of the latter to 100 lbs. of sand. Let it cool. Take a small common sieve and nail boards under the bottom to prevent the sand from running through; place enough sand in the sieve to hold the flowers in position—not covering them; then with a sheet of paper twisted in the form of a cone or tunnel, carefully let the sand pass through it, between, around and over the flowers—cover about half an inch. Set by the stove or in some warm place where the sand will be kept at a temperature of about 70° Fah. When they have remained sufficiently long, remove the boards carefully from the bottom and let the sand run out, leaving your flowers preserved in perfection.

The only difficulty is to know when the process is complete, different plants differing in the time required. Those with thick leaves and petals needing more than light ones. Seven hours are sufficient for some, while others require twelve and even more. Experience alone can determine this. It is best always for a beginner to experiment with a single plant at a time at first. When he has succeeded with a certain variety and noted the time required, he can proceed to others, and in a short time become versed in this art. It should be mentioned that the flowers for this purpose should be picked dry—say midday, after the dew is all evaporated.

[In our first volume, we gave the mode of drying flowers practised in Germany. The idea took well with our public, and since then it has been so generally tried that many improvements have been made, and the above from the *Prairie Farmer,* will be read nearly as freshly as though our original article had not appeared.—Ed.]

Orchard Houses.—Mr. H. H. Hunnewell, of Boston, well known to all readers of Mr. Sargent's beautiful edition of Downing's Landscape Gardening, is rather despondent of great success in Orchard-house management, and fears our climate is opposed to such success as Mr. Rivers claims for his practice, in his work on Orchard Houses. If Mr. H. will pay us a visit next June or July, we will take him to a lady friend's, not three miles from our office, where he may see Peaches, Cherries, Apricots, Nectarines and Plums, under Orchard-house treatment, which, if they are anywhere near equal to what they have been the past two seasons, will convince him that our climate is not so bad as he fears; and we are sure that even Mr. Rivers himself would not feel his system in the least disgraced by the exhibition they will make.

Raspberries on the Hudson.—Prominent among them is the growth of raspberries, and they claim to have been the first that introduced the Hudson River Antwerp to market; and that it succeeds better there than in any other part of this country.

The product is enormous, employing in the picking season, for the conveyance of the fruit from a

section thirty or forty miles along the river a steamboat and barge every night. The Red Antwerp is the best berry for transportation, and the picking affords employment to large numbers of women and children, who earn from fifty cents to over one dollar a day. They are sent to Washington Market in large strong boxes, filled with the baskets holding one-third of a quart, and they sometimes find their way over the New England States, and the neighboring cities of Philadelphia, Baltimore, and others more remote. The bushes are planted in hills like corn, and about the same distance apart, tied to stakes, and about five canes to the hill, to be cut out as soon as done bearing.

They should be bent down, two hills together, in the fall, and covered with earth; and if a sure product of fine fruit is wanted, manure ought to be spread over the surface in the winter. When uncovered in the spring, if the ground is worked and kept clean, they will yield a basket to a hill each day.—*Friend's Intelligencer.*

Lord Kames, in a conversation with his gardener one day, said: "George, the time will come when a man shall be able to carry all the manure for an acre of ground in one of his waistcoat pockets." "I believe it, sir," said the gardener, "but he will then be able to carry all the crop in the other."

Garden of D. Waldo Lincoln, Esq., Worcester, Mass.—In a visit to Worcester, lately, I had the pleasure of examining the garden of D. Waldo Lincoln, Esq. It has been planted from fifteen to twenty years, and comprises most everything of interest in the fruit and ornamental tree departments, with the exception of apples, of which he has but a comparatively small number. Its area is about 15 acres, and is tastefully divided into lawn, pear orchard (and smaller fruits,) and sites for a cold grapery, two houses and a stable. With the out-door culture of grapes he is not much encouraged, as the frosts are earlier and more severe in his locality than in the vicinity of Boston. The highway or northern boundary of his enclosure has a beautiful and thrifty belt of evergreens—pines, Norway Spruce, &c.,—15 to 20 feet high, and the pear orchard is still further screened from the north wind by an internal or special belting of the same, and that which lines the avenue leading to the house also answers the same purpose. These lofty hedges are elegant in summer, and useful and beautiful in the winter. The matter of evergreens, in fact, can hardly be overdone. Some question has been raised whether the Norway spruce would bear the shears and thicken up well in the character of a hedge; but it must be set at rest, for Mr. Lincoln has a thick and very handsomely trimmed hedge of these evergreens about 12 feet high. He has also a large collection of shrubbery and ornamental trees in general, embracing many rare specimens.

The number and variety of the proprietor's pears are extensive, and most of the trees are thrifty and in bearing order, showing at present an excellent crop. Particularly noticed were several heavily-ladened Rostiezer trees, five or six inches in diameter. This excellent variety is a rampant grower, throwing out branches like a rocket; but age gives the tree a tolerably well-balanced and compact head. His Flemish Beauty were also very attractive, with their large, brown fruit, free from cracks, struggling to hold up their branches. The Fulton Pear was also noticed; and although the trees were not so attractive as some others, Mr. L. regards it as one of the best—superior to the Buffum, another small, native, hardy fruit. Very good specimens of the Beurré Clairgeau, and also of the Marie Louise, were seen. The latter were on large standards, and the proprietor regards the variety as one of the best. He has also many of the new sorts of pears, not yet in bearing.

But it was painful to notice the havoc which the *fire blight* was making among Mr. Lincoln's pear trees—many large branches of medium-size trees being black with it. It would seem that we have no remedy for this evil, although it is recommended that the affected parts be immediately cut away, some inches below the disease, and burnt. For appearance, at least, this should be done.

Worcester is a beautiful inland city, noted for its thrift and cleanliness, and conspicuous for its many handsome residences, with their tasty enclosures of flowers, fruit and shrubbery. It also has a large share of handsome public buildings, and much attention is here given to education.—Several railroads terminate or form connection here, also—the well-conducted and well-paying "Boston and Worcester," undoubtedly adding as much as (if not more than) and other to its prosperity.—*New England Farmer.*

Foreign Intelligence.

Himalayan Rhododendrons.—As the culture of the Rhododendron is now exciting attention in this country, the following notes of the habits of the Sikkim varieties by Mr. Booth, in *The Gardeners' Chronicle* will have an interest:—

Although in their native habitat they may be

densely shaded and growing in rocky glens, I think we should not give them a similar situation in this country, as the sun is so much more powerful in their latitude, although at a high elevation, than in the alternately wet and cold climate of England. To show however that even in the case of wild plants shaded and extreme moisture do not promote their flowering, I will give a short extract from my note book of a botanical excursion into Bhotan, during which journey I obtained most of the Rhododendrons I introduced. We had passed through the Terai and were approaching the foot of the higher ranges of the Himalayas. December 15, 1849.—Finding a good supply of water we encamped on the top of a hill called Fascherong.—Observed Epiphytal Rhododendrons and Vacciniums, but was unable to obtain specimens on account of their high position on the trees. Forest chiefly composed of persistent leaved Oak and Chestnut, with a species of Platanus almost leafless; from the branches of the latter more particularly hung long streamers of Usnea. Observed snow on the nearest mountain, thermometer 33° at midnight. December 16.—Started early, road rapidly descending, vegetation tropical. Thyrsacanthus and Begonias abundant. Thermometer at noon 94° Fahr. in shade. Road irregularly ascending; observed Epiphytal Rhododendrons, &c. Continued to ascend; observed Rhododendron Camelliæflorum, R. Edgworthi, and R. Boothii, with abundance of seed and flower buds on them; found many on old decayed and blown down trees on the ground, destitute of seed or flower buds. With great difficulty and delay I obtained seed of these species by climbing such trees as were practicable, and cutting off the boughs on which they were located. Night coming on obliged us to encamp at the foot of the Oola Mountain, atmosphere very close and malarious.

December 17.—Started at our usual time; country densely wooded; observed the Rhododendron. I discovered yesterday also a large underwood trees of R. argenteum, destitute of seed or flower-buds. Continued to ascend; came upon a dense thicket of R. Jenkinsi. I was very much disappointed at not being able to discover a single seed pod on these; soil apparently deep decayed vegetable matter. Continued our ascent; mountain less densely wooded; came upon large thickets of R. argenteum, R. latifolium and R. Jenkinsi; seeds and flower-buds abundant. Fine clear day; thermometer 81° at noon in the shade. Continued to ascend, passing through large masses of Rhododendrons, with here and there a solitary tree of Pinus longifolia and oaks. Continued to ascend; discovered R. Falconeri and eximium, growing in the crevices of protruding masses of sandstone rock; soil stiff and clayey; procured seeds and specimens. Attaining a higher elevation, found a species of Primula, a Convallaria, and Sedum; at this elevation ice and snow abundant, proceeded on our way with difficulty. The road, a water-worn track, covered with ice or drifts of snow; a solitary gnarled oak or Pinus struggling for existence. Found here R. campylocarpum, R. Keysii, and R. Hookeri, with leaves coiled up like so many Havana cigars, and assuming a very winterly appearance. This vegetation, with slight variation, continued to the summit of the mountain; the day was advancing rapidly, and we were compelled to hasten our steps. The descent on the north-eastern side was rapid; R. Hookeri, two or three species of Gaultheria, Primulas, &c., grew alongside our pathway; soil stony, and for the most part composed of clay. Proceeding downwards we came upon extensive thickets of R. Kendrickii, among which we encamped for the night; this is the coldest night I have experienced since leaving England; thermometer 7° Fahrenheit.

18th December. This morning the Coolies were glad to make an early start, for being thinly clad they had passed a miserable night; descending a few miles we came upon an extensive and and almost level tract of country, with a tuft of grass here and there, and a few Gaultherias. The stiff stony soil, slightly moss grown, and this for miles in extent, was studded with the white and crimson R. arboreum, forming one of the gayest and most beautiful sights I ever beheld. The above may tend to show that shade and moisture may produce luxuriance but not flowers.

Winter Care of Fruit.—Whenever a quantity of fruit is piled up in a heap, it begins what in common language is called "to sweat." This sweating brings out an oily substance to the outside. Sweating will also occur without the fruit being so closely piled up as spoken of, but it is more slow; and if it be thinly on a shelf it is in its most legitimate way. This sweating coats the the skin with a sort of varnish, which resists the action of the atmosphere, and certainly promotes the keeping qualities of the fruit. This varnish ought not to be removed by any means, handling being one of the certain ways to do so. Let the fruit, therefore, be placed at first singly on the shelves, and little else will be wanted, but looking over them and picking out decayed ones; and the

place being kept cool and well ventilated, there is a tolerable certainty of their keeping well, other things also being favorable.

PRODUCE OF AN ORCHARD-HOUSE IN ENGLAND.—A lean-to orchard-house 164 feet long, erected by the Earl of Portsmouth in the spring of 1861, at his seat Hurstbourne Park, Hants, has this season been remarkably productive. From six established Peach trees on the back wall 1350 large sized and fine flavored Peaches have been gathered; or, calculating the crop by measurement, the produce of the six trees would amount to 8 bushels and 1½ peck. Besides which the house has produced a full crop of fine cherries, both from trained and potted trees: a large quantity of Strawberries of fine flavor from pots; also from pots Plums, Peaches and Figs, of which no record of the number or weight was kept.—*Cottage Gardener.*

THOMAS FAIRCHILD, THE OLD CITY GARDENER.—On Whit-Tuesday is delivered in St. Leonard's Church, Shoreditch, a "botanical sermon"—the Fairchild Lecture—for which purpose funds were left by Thomas Fairchild, who had the Ivy-gardens and a vineyard at Hoxton. He wrote the "City Gardener," 1722, and his name appears in the Hoxton rate-books as early as 1703. Dying rich, he left to the parish of St. Leonard's £50 (increased to £100 by the parishioners,) the interest to be devoted to a lecture "on the wonderful works of God in the creation; or on the certainty of the resurrection of the dead, proved by the certain changes of the animal and vegetable part of the creation." In 1856, the Fairchild Lecture was delivered at St. Leonard's by the pious and eloquent Bishop of Oxford. It was formerly the custom of the President and several Fellows of the Royal Society to hear this sermon preached. In 1750 the day was Whit-Sunday, when Dr. Stukeley attended, and was afterwards entertained by Mr. Whitman, the vinegar merchant, "at his elegant house by Moorfields, a pleasant place, encompassed with gardens, well stored with all sorts of curious flowers and shrubs."

Fairchild's book is a thin octavo, entitled "The City Gardener," and dedicated to the Governors of Bethlem and Bridewell Hospitals. In the introduction he says, "I have upwards of thirty years been placed near London, on a spot of ground where I have raised several thousand plants, both from foreign countries and of the English growth; and in that time, and from the observations I have made in the London practice of gardening, I find that everything will not prosper in London, either because the smoke of the sea coal does hurt to several plants, or else because those people who have little gardens in London do not know how to manage their plants when they have got them.—And yet I find that almost everybody whose business requires them to be commonly in town, will have something of a garden at any rate. I have been, therefore, advised to give my thoughts in this manner, that every one in London, or other cities, where much sea coal is burnt, may delight themselves in gardening, though they have never so little room, and prepare their understanding to enjoy the country when their trade has given them riches enough to retire from business.

For court-yards and close places, he says, "This part of the city-gardening depends upon more skill than all the rest; for here we have little liberty of air." For these places he recommends Lime, Lilac, Jasmine, Fig, Mulberry, Virginian Creeper, Vine, Privet, Angelica, Lilies, Perennial Sunflowers, Martagon Lily, Tradescant's Starwort, London Pride, "Currans," Elder, Guelder Rose, to which may be added annuals and biennials of various kinds.—To encourage the planting of such places he instances "two large Mulberry trees now growing in a little yard about 16 foot square, at Sam's Coffee-house, in Ludgate Street;" two others at the Hall of the Clothworkers' Company, which "bear plentifully;" Figs in close places about Bridewell; and other Figs in the garden of the Rev. Dr. Bennett, at Cripplegate, which bear well. "At the Rose Tavern, without Temple, there is a Vine that covers an arbor, where the sun very rarely comes, and has had ripe Grapes on it; and at a coffee-house next to Gray's-inn-gate, there is a Vine which grows very well in a small pot, though it is constantly kept in a close room; this year it was full of leaves before Christmas.—*London Paper.*

FORMATION OF WOOD.—It is formed from the descending sap. In order to ascertain whether the new layer of wood is formed from the former layer of wood, or of bark, M. Du Hamel made a graft *par l'ecusson (Phys. des. Arb.* liv. iv. chap. 4); which is done by means of detaching a portion of bark from the trunk of a tree, and supplying its place exactly by means of a portion of bark detached from the trunk of another tree that shall contain a bud. In this way he grafted the Peach on a Plum tree, because the appearance of the wood which they respectively form is so very different, that it could easily be ascertained whether the new layer was produced from the stock or from the graft. Accordingly, at the end of four or five months after

the time of grafting, the tree was cut down; and as the season of the flowing of the sap was past, a portion of the trunk, including the graft, was now boiled to make it part more easily with its bark; in the stripping off of which there was found to be formed under the graft a thin plate of wood of the Peach, united to the Plum by its sides, but not by its inner surface, although it had been applied to the stock as closely as possible. Hence Du Hamel concluded that the new layer of wood is formed from the bark, and not from the wood of the preceding year. The same experiment was repeated with the same result upon the Willow and Poplar; when it was also found that if a portion of wood is left on the graft it dies, and the new wood formed by the the bark is exterior to it."

PROPAGATING PINES.—This is a very rich tribe, and includes the following section:—Pinus, Picea, Abies, Larix and Cedrus. Propagation by cuttings is very difficult, and they are much more readily raised by grafting on those to which they are allied. They are also freely propagated by seed. Abies, Picea and Cedrus, however, can be propagated by cuttings more readily than by any other means. The best time for taking cuttings, and performing the operation of grafting, is in February and March, or September and October. The stock and graft should be of equal size, as they then join much better and sooner than when unequal. Only such Pines as are quite hardy should be selected for grafting on, and the strongest stocks should always be used. Pinus strobus and P. sylvestris grow very well in the open ground, but P. Mughus is the best adapted for exposure in places where the climate is cold. Cedrus grows freely from cuttings, and is also readily grafted on the hardy species of Pinus. Larix sibirica, L. americana and others, can only be propagated well and readily when grafted on L. Europea, and its varieties. Picea and Abies may be readily worked on stocks of each other, but the best stocks to graft upon are Abies excelsa and P. pectinata.—M. COURTIN, *Bordeaux.*

NEW PLANT COLLECTOR.—A society has been formed in Scotland to send a collector of new seeds and plants to British Columbia, Vancouver's Island, and the country near the western slopes of the Rocky mountains, and Mr. Robert Brown, a distinguished British naturalist has received the appointment.

HOW CORK IS COLLECTED.—M. Casimir de Candolle, the third inheritor of the name of a honored race of botanists has submitted his maiden scientific paper to the Geneva Natural History Society on the production of cork:

"The operation consists in the removal from the trunk of the natural corky layer of the bark down to the subajacent cellular envelope or green layer; which is done in Algeria, (where young De Candolle's observations were made), during the summer or autumn. Shortly after this operation, a new corky stratum begins to form in the green layer, at a variable distance from its denuded surface. This grows by annual layers upon its internal face, just as the original and worthless corky layer did; but this is much finer and much more elastic, and is the commercial article. When this valuable cork has attained sufficient thickness, ordinarily after seven or eight years, it also is removed, with the same result as before, *i. e.*, still another new corky stratum is formed below; and so successive crops may be taken off the trunk every seventh or eighth year for a long while, or even indefinitely.

PARLOR AND DINNER TABLE DECORATIONS.—In former numbers we have extracted from English journals their remarks on the exhibition of table decorations. The subject is increasing in interest, and at the last June meeting the competition was more exciting than any matters before the Horticultural Society had caused for many years.

For the benefit of our fair readers we give two extracts, the first from a lady correspondent of the *London Gardener's Chronicle*, the last from the London *Cottage Gardener*. The extracts are rather long, and in this season of fruits, Horticulturists of the masculine gender may envy the ladies so much space—we, however, are too much pleased to find the fair sex so much interested in whatever may add to the charms and loveliness of home, to care for a cross word or two on this score:—

THE LADIES' CONTEST AT SOUTH KENSINGTON.—Never did I feel that a rapid progress is going on around us more than to-day when gazing at the table decorations in the Royal Horticultural Gardens, South Kensington. This particular branch of exhibition appears most popular, to judge from the increased space occupied by the groups. Last year the judges could have had but little trouble in awarding the prizes, the majority of the things exhibited being poor samples of taste; whilst this year the bad ones are the exception and the graceful ones the rule. The manner of exhibition is also as much improved as the things exhibited: now there is a very long table covered with a white cloth, divided into different spaces, allowing each group to be seen distinctly by itself, instead of being huddled together, two or three sets deep, as

they were last June. First and foremost in my recollection is a group of three clear white glass baskets with twisted handles, bearing the name of Pickering, the centre one containing Grapes, green leaves with a small bunch hanging most naturally from the centre of the handle, on one side a basket of red Roses and a red Cactus relieved by Fern leaves, and on the other a basket of Water Lilies and a lilac Orchid—a lovely trio, but it is difficult to say how they would look surrounded by the crowd of things always on a dinner table; for a drawing-room they were perfect. By way of contrast I must describe another group (No. 6,) of a totally different kind; formed of three clear white glass rods supporting a vase of flowers at the top, with a looking-glass flooring, decorated all round its edges with Water Lilies; leaning against one of the rods was a tall Fox-glove, looking quite at home and admiring itself in the mirror at its feet, and creeping up another rod was the common Cat's-tail Grass, whilst here and there appeared Strawberries in blossom and fruit; the charm of the arrangement was the natural manner in which each thing seemed to find its proper place, without having a studied look. Another of the best groups was composed principally of delicate and choice Fern leaves, exhibited by the Misses Veitch; each leaf stood out by itself only a few flowers being introduced to enliven it; the little glass at the top of the centre piece was perfect, merely two or three sprays bearing small bunches of green and red berries, which gave a lightness and finish to the whole; it would have been quite complete had the same idea of color been repeated on the top of the two side pieces, and had the rim of the basement on the cloth been artfully concealed. Running the eye down the whole length of the table, my eye was arrested by a group much greener than its neighbor, and upon examining it I found it bore the name of Salter; the flowers consisted of dark blue Larkspur and white Iris, with Fern leaves in one piece, and Roses and green leaves in the other, while the basements were decorated entirely with Moss and variegated leaves of different sizes and shapes. This produced an extremely good effect; the centre piece was a kind of glass archway carrying a lovely bouquet on the top; its blemish was a small silver urn immediately under the arch, which looked like an intruder, and I longed to turn it out. No. 32 was of rather a different nature, the form was similar to the usual tall glass pieces, namely, flowers at the top of a pedestal and flowers or fruit at the base; but in this instance the framework was composed of gilt wire; it looked light and graceful, and the wreaths of pink Kalmias by which they were ornamented were remarkably pretty. There was also a very choice group exhibited by Mrs. Thompson, of Notting Hill, consisting of three pieces, in form like Mr. March's of last year, but improved by having the glass rods twisted.—The centre piece contained Phalænopsis and a few other exquisite flowers, with some Ferns, whilst Cissus discolor twined round the supporting rods; on one side the prevailing colors were yellow and lilac, and on the other side Gloxinias were grouped together so as to produce a charming effect. Several handsome silver groups were placed, the best of which was exhibited by Mr. Lucking; the stiffness and formality of little plates of fruit being arranged around a centre being entirely done away with, by the introduction of some cleverly managed Caladium leaves on stalks of different lengths. Besides these, large masses of Ferns leaves and flowers were mingled with the silver ornaments. No. 1 consisted of a complete dessert service of pure white porcelain, which material suited the fruit and looked remarkably well, but the flowers in baskets looked stiff and ungraceful. There were two or three specimens of table decoration, to which I cannot at present feel reconciled; they looked too much like small flower gardens lifted into a large long silver dish. One with fruit introduced amongst a bed of Roses was the best, but they were not to be compared for grace to some of their neighbors; for instance take Mrs. Fawcett's tall ground glass vases filled with lovely lilac Orchids and white African Lilies, the centre piece having ground glass shells round the bottom, out of and around which appeared bunches of Grapes very capitally managed and forming a lovely group. Although this epistle is nearly as long as the table of flowers itself, I must describe one more group. Three very tall opaque white glass vases, filled with well arranged flowers and Ribbon Grass, were supported by heavy angular feet, over which hung large bunches of Grapes at regular distances; this group was undoubtedly striking, but I leave it to others to decide whether or not it was in good taste. As there was so much to admire, I must spare the few ugly ones the annoyance of being shown up, trusting that when they looked at their more successful rivals, they felt how far their display was below that standard of simple elegance which the competition at South Kensington has already raised with so much success.

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The Show was very little different from the May Show; the grand Pelargoniums made up for what

the Azaleas lacked of their May lustre; and the competition for the dessert and dinner table decoration was so imposing as to embrace more than the same amount of the public attention which was given in May to the drawing-room and conservatory decorations. But the effect was singularly different.

The grand improvement was in the dinner-decoration services. I should think that from two dozen to thirty people competed for the distinction, and, with the exception of three of them, they were very well done indeed, and some of them very superiorly. The idea is most excellent; but people who thoroughly understand it find such a difficulty in breaking through an old and original principle of the dessert-table, that none or hardly any but amateurs have yet attempted to compete, and perhaps that is as well. Strangers, however, to the grand doings of our grandees in their territorial dining-rooms can yet get no glimpse of it from these competitions. Not one of the "sets" of last year or of this has been set on dining-room principles—a fault which I wonder such lady judges have not yet pointed out to the Society, and a fault which might easily be prevented. The dining-table was, say 100 yards long, and if there were thirty competitors there would be just ninety dishes, or thirty "services," which are never called dishes in dining-room language. Every two dishes of each of these thirty "services" were placed wrong-ways on the table at this Exhibition—that is to say, were set down in the line of the run of the table, instead of *across the table.*

In high private dining arrangements, it is considered either vulgar, or evidence of a want of means, to put any fruit bigger than Cherries in the centre group at all. The bare bones of private dessert are six dishes, and a centre of three, the middle one being *the centre*, and the other two *the flanks*, and these invariably stand across the dining-table. The "top" and "bottom" are the first and second best dishes of "bare bone," and the "four corners" are the next best, and must be in match pairs. That is the smallest dessert you can place within the letter of the law, and your "centre piece" is the ornamental part of it for flowers, confections, and very fancy things, which the young of the party are sure to amuse themselves with ere all is finished; but if the party is thought to be rather too many for the size of the dinner-table, the bottom of the flanks and centre may be borrowed, as it were, to hold your small fruit, which is seldom touched. But in more ordinary ways, I never could see why the "centre" should not hold, or do for all the fruit and flowers. But I hold it as being perfectly impossible for any one to "set up" fruit and flowers on a centre group, as in this competition, with any degree of confidence, or with much effect either, unless he is to know whether the centre is to be the whole dessert, or merely the ornamental part of it.

The premier prize went last year and this on the supposition that the "centre" was at least the main seat of the dessert, which it never is, except at dinners on a very limited scale, or when a family sit down to enjoy a meal by themselves, which is as different from a dinner party as are a carriage bonnet and French gloves to a garden hat and gardening gloves.

The Ribston Pippin Apple—the standard national variety in England—so very like the Newtown Pippin in America—also, like our Newtown Pippin here—is "degenerating" there. The *Cottage Gardener* says:—

"In very many districts the Ribston Pippin Apple has ceased to be cultivated as a profitable fruit; the trees thriving indifferently for a very few years, either die off or linger on a wretched existence, the dead branches almost equalling the live ones in number. Though there is generally a fair proportion of blossom each season, what fruit there is can seldom be classed higher than second, or, perhaps, third-rate. Now, these fruits have, in many of them, the germs of decay before they are gathered from the tree; black specks near the eye, or, in some cases, near the other end, turn into a mass of decay of a peculiarly bitter quality, differing widely from the ordinary "rot," by which most other fruits are carried off more quickly, but not less surely, than by this black bitter spot of the Ribston."

There seems to be something in the theory of "degeneracy," though the facts are so disconnected that it cannot as yet be lucidly defended.

Soap-Suds for Pot Plants.—I do not know how far the plan is orthodox, but I have often found soap-suds a great thing for pot plants. I have even washed plants often with a flannel and soap, (common yellow soap), and my own belief is that few things are better for keeping blight away. Soap-suds, also, are an available manure, and thus my own plants often have received amazing benefit from the mere supply of soap-suds, following the sort of "lace washes" that people's maids have at home. Arums especially benefit, because the soil is thus freed from insects; but for these sort of things, especially while out of doors out of the way,

nothing does better than a spoonful of soot in a small can of water. It is a happy certainty that even the wire-worms hate this, and any thing they do hate is a real treat to know of.—*G. Chronicle.*

Horticultural Notices.

THE AMERICAN POMOLOGICAL SOCIETY.

We have not yet received the official report of the last meeting of the National Pomological Society, so that we are unable to give this month an abstract as we expected.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The monthly discussion on the 2d of September was crowded out by a press of other matter; but the essay of Mr. Walter Elder, on Rotative Cropping, being the result of many years experience from a practical man, is worthy of attention, and we give it entire in our column for original matter:

In the discussion which followed, Mr. Harrison thought that when science and practice had become so well understood that we could supply for each crop the necessary elements wanting in the soil, there would be less need of the attention now required to rotative cropping. Mr. Charles H. Miller also agreed with this view, and stated that in his practice he pays much less attention to rotative cropping than he once did. Mr. C. P. Hayes considered rotation useful for trees, if not so much for vegetables. Mr. James Eadie gave some forcible reasons in favor of rotation. Amongst others he remarked that insects that prefer certain plants, nerease most abundantly when such plants are grown a long time in one place.

The monthly display on the 9th was very fine indeed; and considering that the artillery of two mighty armies were almost within sound of the Hall, and many of the members had left to take an active part in the defence of the State, the unusually fine exhibition was the occasion of much comment.

1st premiums were awarded for the best table design to Adam Graham, gardener to General Patterson,—Hanging Baskets to J. Eadie, gardener to Dr. Rush,—Hand Bouquet to Mr. Robert Kilvington,—Variegated Plants, J. Eadie, gardener to Dr. Rush; Ferns to Mr. R. Buist; Orchids to Edward Hibbert, gardener to Fairman Rogers, Esq.; Dahlias to Mr. R. Buist,—Roses to the same. For Leaf Plants special premiums were awarded to W. Joyce, gardener to the President Baldwin, J. Pollock, gardener to J. Dundas, Esq.; E. Hibbert, gardener to F. Rogers, Esq.; Adam Graham, gardener to Gen. Patterson. For Ferns to E. Hibbert, gardener to Fairman Rogers, Esq.; for Orchidea, to C. Mack, gardener to N. Lennig, Esq.; for Rustic Table Design, to F. C. Baylis.

The committee also noticed as particularly worthy of attention from Mr. Buist,—Thujiopis lætevirens vestita and Lycopodium Wallichii, as quite new to the Society; richly marked Seedling Petunias of the Zouave class from Isaac Buchanan, Florist of New York. Double Zinnias from H. A. Dreer, and rustic vases from W. Southwood.

The first committee awarded the premiums for the best 10 varieties of Native Grapes to Mr. P. Raabe. It comprized Diana, Clara, Rebecca, Maxatawny, Delaware, Raabe, Graham, Emily, Newport, and Elsinborough. These grapes ripened in a city yard, were very fine in quality. Delaware and Maxatawny being far ahead of all the others. There was about an equal difference of opinion as to which of these two grapes was the best flavored. Those who like sweet things sided with the Maxatawny, while those who had a more "vinous" affection, leaned to the Delaware. The best six kinds awarded to Mr. H. A. Dreer. Peaches, Mr. I. B. Baxter's "Old Mixon Free,—Plums 1st premium to the same. 12 Pears, do. Best 6 Pears, Mr. W. Parry. Best new variety, Mr. J. Rutter, for Uwchlan.

P. S. Bunting exhibited Steinmetz Catharine; T. T. Mather "Kirtland," Dr. Ladd "Larissa," A. W. Harrison, Doyenné Robin, C. Harmar, "Bartlett," S. M. Noble exhibited apple "Cornell's Fancy," a superb local apple. E. Tatnall "Rebecca," T. T. Mather, "Townsend."

A seedling peach by Isaac C. Price received high praise from the committee.

A premium was awarded to Mr. H. A. Dreer for a very fine collection of Gladiolus overlooked by the committee at the last meeting.

FRUIT GROWERS' SOCIETY OF EASTERN PENNSYLVANIA.

This energetic young society held a special meeting in Philadelphia on the 1st, 2d and 3d of October, ostensibly for an exhibition and "talk" upon grapes; but it ripened into a regular fruit exhibition, and as an exhibition of fruit alone, was, we think, the largest ever made in Philadelphia. We have no means of knowing how many varieties

were on exhibition, but it would seem to one not deeply versed in the present advanced state of the science of the "multiplication," as against the degeneracy of varieties, that every kind known was there before him. Altogether the whole community of fruit lovers owe a deep gratitude to the officers and active members, who got together such a mass of matter for our edification and instruction.

The meeting was opened by reading reports of committees—one on Grape Wine we give in another column. One from Mr. S. Miller, of Lebanon, as Chairman of General Fruit Committee enclosing without comment the report of local committies. Mr. M. spoke well of Bishop's Orange Strawberry; of the newer cherries he spoke well of Conklin's Favorite and Conestoga. The White Blackberry he also praised. Of his success in grape growing, Mr. Miller gave a rather poor account, but thought the Concord came out best.—Clinton he thought a free growing grape, too much overlooked.

In the report from Northampton County, Mr. R. A. Grider of Bethlehem spoke very highly of the Democrat Pear; of Strawberries Hovey did better this year than usual, while Wilson's Albany "sustained its high reputation," though many died out after bearing, probably from attacks of a white grub. Mr. G. thought a *well ripened* Albany "possessed a most agreeable flavor, and a prickling juicy acidity which lovers of good fruit will appreciate and value." Strawberry Wine sells from $1.50 to $2 per barrel in that region. The knot affects the cherry badly in Mr. G.'s district. An European Sour Cherry 10 days earlier than the common, exists in the neighborhood of Bethlehem. Of early apples Red Astrachan is best there. The rot and mildew affected grapes there badly. All kinds but the Delaware, that are known in that region suffer. Catawbas a total failure. Taylor's Bullitt promised to be a worthless grape. The "Gravel" grape, a seedling from the banks of the Delaware, promised well.—

The report from Montgomery County, by Mr. Crans, spoke well of Lennig's White and Abington Blush Strawberries—When well fertilized the Allen was found to be the best raspberry. The Richland, the Plum most certain to bear a crop.—Amongst the apples Smith's Cider was named as "the most productive of all."

From Lancaster County, by Mr. Casper Hiller, dated "from Camp at Hagerstown," and like most soldiers letters written in pencil. Mr. H. thought that so many of the "degenerate" varieties, doing as well as ever this year, exploded the "degenerate" theory. The "All Summer Apple" stood at "the head of his list." The Maynard Pear, a variety little known, he spoke highly of.

The preparation of soil, and cultivation of fruits brought up quite an animated discussion—Mr. Harrison took the ground that labor on deepening soil, and rendering it permeable before planting, was labor well spent. Mr. Cornelius showed by his own practice that deep holes without underdraining the whole ground, were an evil. He advocated underdraining. A. W. Corson had found in trees set in underdrained land those do best nearest to the drains. Mr. Baldwin opposed heavy manuring, and advocated shallow planting. Dr. Hough ton opposed deep trenching and heavy manuring, but approved of rich surface soil, would not plant fruit trees in any soil that required underdraining. Dr. Eshleman had found strawberry roots 2 feet deep, and thus inferred it right to make the soil as deep as he could. Mr. I. B. Baxter's garden was made about 18 years ago, on a lot which was a common covered with loads of brickbats. He dug holes and planted in the common way, found the evil to be too much growth. He used wood ashes and kitchen waste for manure. All the old iron he could collect he puts around his trees to keep off blight. Dislikes stable manure—avoids it—sticks to ashes of hickory wood. (Mr. Baxter's fruits are always remarkable—reporter.)

Mr. Satterthwaite opposed trenching; besides the expense it was useless, as the subsoil when loosened became as hard as ever very soon again. Had tried subsoiling extensively, but had abandoned it—a soil one foot deep was all that was necessary to grow good fruit. It was an evil to entice roots downward. He would encourage them to keep near the surface as much as possible.

The committee recommended a list of Pear adapted to general cultivation "in this State," they were discussed singly by the meeting and amended as follows:—Doyenné d'Eté on pear and and quince, Early Catharine on pear, Bloodgood on pear, Beurré Giffard on quince, Rostiezer on pear, Ott on pear, Tyson on pear, Bartlett on pear, St. Ghislain on pear, Kingsessing on pear, Seckel on pear and quince, Urbaniste on pear, Beurré d'Anjou on pear and quince, Lawrence pear and quince, Winter Nelis on pear, Easter Beurré Q.—The Rutter also reported by the committee, was reduced by the meeting to "promising well."

Mr Satterthwaite presented a list for a larger collection, which after being amended by the meeting, was adopted as follows:—

Doyenné d'Eté, Beurré Giffard, Osband's Summer, Manning's Elizabeth for quince; Kirtland, Belle Lucratif, Des Nonnes, Buffum, Steven's Genesee, Seckel, Louise Bonne de Jersey on quince: Onondaga, Sheldon on pear; Beurré d'Anjou, Duchesse d'Angoulême on quince; Beurré Clairgeau, Lawrence, Vicar of Winkfield on quince; Easter Beurré on quince; Madeleine on pear; Bloodgood on pear; Dearborn's Seedling, Julienne on pear; Ott, Tyson on pear; Beurré Goubault on quince; Beurré d'Amalis on quince; Ananas, or Henry 4th on quince; Flemish Beauty, Beurré Bosc on pear; Doyenné Boussock, Brandywine, Howell, Beurré Waterloo on quince; Kingsessing, Beurré Diel on quince; Doyenné d'Alençon, Winter Nelis, Glout Morceau.

On motion of Mr. John Rutter, the Washington was added to the list for cultivation on pear.

On discussion the subject of insects injurious to the grape vine, most of the members inclined to the opinion that the only dangerous enemies were the steel blue grape beetle and the thrip. On the first named trouble, Dr. Eshleman spoke to the effect that if they were watched early in the morning, they could easily be catched and totally destroyed, and with reference to the thrip, Mr. Grider said that burning torches made of straw dipped in tar drawn near by the vines, while some one shook the branches, after dark, was the best remedy he knew.

Amongst the business matters, part of the proceedings, were many of public interest, which we are sorry to have to very much condense to suit our space. The committee on seedling fruits reported on 13 apples exhibited, 4 pears, 6 peaches and 13 grapes—these were not all new seedlings, some have been out several years, but are still little known.

Of those the committee seemed to think well of, were apples, Andrews, from Delaware County, Pa., ripe early in September. A seedling from Berks County, by Lukens Pierce, August to September. Milner's Favorite, the Penn and Newfoundland. One that seemed new to us, though not noted by the committee, named Myer's Nonpariel, we thought one of the best fruits of the season.

Of pears, the Hampton very much like Washington. Bartram very good, succeeding Bartlett. Democrat "fair good quality."

Of grapes, Montgomery, or Kramer, "believed to be of foreign origin." Creveling, "good early grape, similar to Isabella, worthy of cultivation.—Newport, a purple seedling of Isabella. Flickwehr, "similar to Clinton." Adirondac, "promising." Martha a "white seedling from Concord." Flora, "light purple, juicy, vinous, with a tender pulp." Altogether a very conservative and cautious report.

In connection with grapes, a curious report was made by the committee on Synonyms of grapes "so nearly or quite alike that for practical purposes they would be regarded as Synonyms of Isabella.

They were Paine's Early, Cloanthe, New Hope, New Hanover, Wright's Isabella, Louisa, Hyde's Eliza, Pitt's White, Arkansas, Rhenish, Catherwood, Garrigues, Christie's Isabella, Marker. We did not understand whether this similarity had reference to the fruit alone, or its quality. If habit, hardiness, vigor of growth, and other essential points were considered, it is not very flattering to the discrimination of "good judges" who have thus unnecessarily sent so many "new" kinds out. They also reported a list of 20 kinds as absolutely worthless. These were mostly unknown kinds; but amongst them we noticed Venango, Northern Muscadine, Perkins, Blood, Black, Franklin, Canby's August and Brandywine.

The Concord was recommended as the grape for general cultivation; the Delaware also, but requiring more care to perfect than the Concord; Clinton as a wine grape; and they further reported "that the Isabella could not yet be dispensed with," a clause that excited considerable discussion.

The Diana and Rebecca were recommended for sheltered situations—and Maxatawney, Creveling, Union Village, Alvey, for "further trial." As in the former case, it was thought this committee also savoured of commendable cautiousness.

The Adirondac Grape was presented by Dr. Houghton, and attracted much attention and favorable comment.

The committee on apples to draft a list for East. Pennsylvania, reported Knowles' Early, Large Yellow Bough, Prince's Early Harvest, Red Astrachan, Townsend, Jefferis, Klaproth and Rock.—The two last were struck out by the meeting and Primate added. These were early.

For mid season—Jersey Sweet, Maiden's Blush, Smokehouse, Porter, Mother, Gravenstein and Strode's Birmingham—the last was struck out.—The others adopted by the society.

Late season—R. I. Greening, Fornwalder, Baldwin, Smith's Cider, L. I. Russett, Hubbardson Nonsuch, Ladies Sweeting, Ridge Pippin.

In conclusion of our brief notes we beg to tender our thanks to Mr. Gustavus Heins, for the privilege of correcting our notes by his own. Mr. H's. position of Honorary Secretary is an arduous one, but it could not be better filled.

THE
GARDENER'S MONTHLY.
DEVOTED TO
Horticulture, Arboriculture, Botany & Rural Affairs.

THOMAS MEEHAN, Editor.
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Hints for December.

FLOWER-GARDEN AND PLEASURE-GROUND.

Persons who have small places, are often exercised as to the best way to lay them out. A too common error is to attempt too much. Having read of fine specimens of taste, or imbibed a love for the art from some superior work on Landscape Gardening, or some friend's extensive country-seat, it is quite natural to wish to make the most of a limited plot. And this making the most of the thing implies a good deal, while it leads into many errors. The *relation* of the *means to the end* should never be lost sight of, and nothing attempted that has not some well-defined object.

When a house is built, the first object is to connect it with the public road, with the stable, and with the offices. In laying out these roads, convenience and beauty must be consulted. The first suggests to go "straight on;" the last whispers, "curve gracefully round." Convenience being the chief object, must be respected; and whatever deviations from the straight line is allowed to the importunities of beauty, should be done from a seeming compulsion. Hence the curve should have its salient point filled with a heap of roots or rocks, or a thick mass of shrubbery; or, what is still better, the soil should be raised to form a rise or knoll, as if the road had to be taken around to avoid the obstruction. Much may be done for a small plot by this plan of making the surface irregular. A dead level, or a regular plane, looks smaller than it really is. Around the house, it should be so; as a sudden transition from the delicacies of art in the building, to the roughness of nature in the grounds, is offensive,—but at a little distance off, very lively effects may be obtained by taking off a little soil here, and adding there, so as to make the surface broken and irregular. The effect may still further be increased by planting the rises, and leaving the lower surfaces bare. To still further give the idea of extent, shrubbery should be planted in irregular masses to conceal the fences and boundaries; and many objects on the place itself may be partially concealed by planting all with the view of exciting the curiosity to know "how much more is beyond." Besides the mere purposes of shade from the sun, and screen from winds, large growing trees should not be employed in decorating the property, as all large objects lessen the apparent size of the lot. Besides, small and medium growing trees afford a greater variety.

The walks being decided on with a view to convenience and beauty, and the general idea of giving the plot the appearance of as much extent as possible, being kept in view, it may be useful to say something as to the making of walks and lawns, and preparing the soil for trees and vegetables.—A carriage-road on a small place should be at least eight feet wide. If so large, or the road so long that there is a chance of carriages meeting, it should be fourteen feet. There is not much use in underdraining roads; it is better to make provision for the water to run freely over the surface.—When draining is resorted to, it will be rather to make the under stratum dry, than to carry off surface water, and if communication be desired with the surface, silt basins under the inlets should be always resorted to. These are shallow wells, a few feet lower than the drains, which thus catch all the sand, and so prevent the choking of the drains during heavy storms of rain. The road should be dug out six inches deep, and filled up entirely to the surface with rough stones, the harder the better. When full, the surface should be broken very fine with the hammer. The surface stones are usually broken to the size of hen's eggs, but if still smaller, so much the better. Then sand should

be put over the broken stone sufficient to fill in the spaces, and over the whole enough gravel or whatever material is employed, to just cover the sand; so that, when finished, the broken stone will not be more than a quarter of an inch, at most, beneath the surface. Should the road be steep, provision must be made to guard against washing by heavy rains, either by small gutters of stone or brick, or by inserting cross bars occasionally to carry the water over the verges of the road. It may be further remarked, in road-making, that the extent of a lawn is apparently increased by having the walk or road sunk some inches below the general surface. On the other hand, a full walk seems to lessen the space. Small foot-paths need not be dug out over four inches, but in other respects, they should be constructed as the others. Roads, in all cases, should have both sides nearly, or quite, level, —where one side is higher than the other, besides the unpleasantness to pedestrians, carriages wear such roads rapidly away, by the weight being so much greater on the lower wheels.

In preparing the grounds, it should be remembered that grass and trees are not only required to grow therein, but that they must *grow well*. The top soil of the lot is often covered by the soil from the excavations, trusting to heavy manuring to promote fertility. But this is a too slow and expensive process. The top surface soil should, in all cases, be saved, and replaced over the baser soil. Also, where it is necessary to lower a piece of ground, the top soil should be saved to place over again. The depth of the soil is an important matter, both for the trees and the lawn. It should be at least eighteen inches deep. In shallow soils grass will burn out under a few days of hot sun.— In a soil eighteen inches deep a lawn will be green in the driest weather. For the sake of the trees, also, the ground should be not only deep, but rich. If from thirty to forty loads of stable-manure to the acre could be appropriated, it would be money well spent. Life is too short for it to be an object to wait too long for trees to grow, and planting large ones is an expensive, as well as unsatisfactory business. A tree in a rich and deep soil will grow as much in one year as in five in a poor one. So in preparing a lawn, it is fortunate that, while aiming at the best effects, we are helping our trees also. It is generally best to sow for a lawn than to sod, where much of it has to be done. The edges of the roads must, of course, be sodded, the balance neatly raked over and sown. The best kind of grass to be employed in seeding is a disputed point; and it will, no doubt, depend in a great measure on the locality. Philadelphia and northward, the perennial rye grass is excellent. It commences to grow very early, and has a peculiarly lively, shining green. South of Philadelphia it is very liable to get burned out in summer, and the Kentucky blue grass would be much better. It is much the best to have but one kind of grass for a lawn, provided it is suited to the locality. A mixture of kinds is apt to give a spotted and variegated character, not at all pleasing. Some people like to see white clover growing thickly in a lawn, and others object to any thing but green. However, if a good grass-rake is employed freely in summer time, the heads of these flowers may be kept from expanding.

Tender plants or shrubs, evergreens or deciduous, that are hardy after getting established, should be protected while young with a thin screen of branches, or any litter that will break the full force of the wind or sun's rays. The Morinda Spruce, Abies Douglasii, and Silver Fir, are perfectly hardy with the thermometer much below zero, when they have thus been nursed up eight or ten feet high. Herbaceous plants, such as Pæonies, Dicentra spectabilis, Phloxes, Delphiniums, &c., are better to be protected around the roots with some litter; for, although perfectly hardy, the protecting them from frost permits their roots to grow throughout the winter, and they push earlier and stronger in spring.

When the ground becomes frozen, many will commence pruning. Properly, summer is the proper time to commence pruning; the winter should be the time the job commenced in summer should finish. The object of pruning in the winter season is to impart vigor to the tree, or to cause branches to push next season strongly and vigorously in such parts as it may be desirable to have them. A tree which is already growing up vigorously, and is shapen according to our best wishes, can receive no advantage from pruning now. Any branches that cross each other, or that are otherwise misplaced, may, however, be cut out. Any trees that have arrived at maturity, and have some parts apparently weakened or decaying, should, on the other hand, have a thorough overhauling now. All scars made by the sawing off of any of the larger branches, should be painted over to keep out the damp, and to preserve it sound till the new bark shall grow completely over it. This is a very important matter. Many fine trees are prematurely lost through this neglect. The wood decays, water enters, and the tree soon becomes hollow and worthless. Some use paint, but others use gum-

shellac dissolved in alcohol, a bottle of which they always keep on hand, ready for the purpose.

This is also a good time to cut away any trees that it may be desirable to take down. When a place is first planted, many common trees are set in with the choicer ones, with the design of taking them away as the better ones grow. These, when becoming thick, should be gradually thinned out.

Hedges, also, will need attention. Those recently planted should be pruned where it is desired to make them shoot vigorously and freely. Older hedges that have been pruned properly in summer will need little now besides trimming slightly to preserve their desired shape. If a hedge is in such a condition that it seems to require a good winter pruning, it may be set down as good for nothing, and not worth further attention. The better plan would be to cut it down to the ground and let it shoot again for a better summer treatment in future. It is very important that no weeds or litter of any kind should be left near hedges. Under such protection mice harbor, and feed on the plants, often to the utter destruction of the hedge. Those who keep their hedge-rows clean, never, so far as our observations go, suffer from mice. The clippings of hedges and small prunings of hedges may be put to a very good use in improving the soil. Underdraining is now universally admitted to be one of the best means of permanently improving land. Where tiles cannot be conveniently had, small stones or similar waste rubbish may be thrown in the bottom of the ditches, and over these loose materials the prunings of the season placed thinly, but firmly, before throwing in the soil. They keep the soil out of the drainage, and, as they decay, absorb a great quantity of moisture, which, in a dry time, give off a great portion again to the dryer soil. Even where tile are used, they may be employed to advantage.

Flower-beds should have attention at this season so far as preparing them for flowers next season is concerned. A very rich soil is improper, as it encourages too much leaf growth; while in a poor soil they will not grow at all. Flower-beds generally do better with concentrated manure, such as guano, than with rank, unfermented material.—The very best soil for flower-beds is top-soil from an old pasture, which has been in a heap to rot for a season. Verbenas especiallyrevel in such a situation.

There are few things that give greater interest to gardens, than rustic seats, arbors and vases.—This is the proper season to collect materials for the work, which consists of the ugliest and crookedest pieces of wood that can be got.

Carpenters cannot do work of this kind properly. Gardeners, where they possess a taste this way,—and most of them have the idea,—always can give the best hints for these affairs. A good, handy man—handy with the saw, hatchet and knife—would soon make a paradise of the poorest looking garden with very little of the commonest material.

GREENHOUSE AND CONSERVATORY.

The greatest trouble with unexperienced cultivators comes with trying to keep the house warm.—In the endeavor to provide against frost, the plants become roasted. In the struggle with the Ice King, fires should form the *corps de reserve*. The house should be built on a warm and sheltered aspect.—Then every crevice, crack, and chink, should be carefully closed by list, and the result will prove an astonisher in maintaining the temperature.—Then shutters or mats may be employed to great advantage; we know one friend who has a curtain made of old carpet, which slides on rings along the front sash of his greenhouse, and he succeeds in keeping out a great degree of frost with very little fire.

When fire heat is applied, syringe frequently if the atmosphere seems dry. It is the dry air fire heat necessitates that renders it so injurious to vegetation. Pans of water may also be set on or near the flues. Another danger also follows fire heat. When the sun shines warm, plants usually dry at the top of the soil first, and it is easily seen when they require water; but fire heat dries the plants from the bottom upwards, and the necessary syringings by moistening the surface, leads us often to think the plant is all right, when in reality it is under the shadow of death.

The remedy is a watchful eye, to detect the first appearance of wilting of the foliage, when the plant should have a thorough soaking of water, that will show itself through the hole in the bottom of the pot. The water employed should be as nearly as possible of the same temperature as the house, which can be secured by keeping a tub always full on finishing the daily waterings.

A conservatory requires rather a higher temperature than a mere greenhouse. In the one flowers in bloom is a chief object: to keep them well over the winter is more the point with the latter.—Plants will not grow and flower under 55°, but the temperature should not be allowed to go above 60°. In very cold nights, when there is a strong fire heat, the temperature may be lower. Hanging baskets, which are now so generally employed for

room, cabinet, and conservatory decorations, frequently have their plants injured by getting too dry. It is a good practice to give them occasionally a dip for a few minutes entirely under water. Ferns and lycopodiums, also very popular, do best in the most humid part of the house. If in a room or place where the atmosphere is very dry, no success can be expected unless a glass case be kept for most part of the time over them.

Mildew often makes its appearance at this season in plant houses, especially on young and the tender leaves of roses that are kept growing for their winter flowers. Practical men are not yet agreed on the causes of mildew, but on one point there is but one opinion, namely, that mildew will not attack a healthy plant, if at all, as certainly as it will an unhealthy one. A good way to treat a mildewed plant, will therefore be to place it at once in the situation we can best command for a combination of healthy circumstances. The plant may have been partially crowded by others; set it by itself where it can have a good circulation of air all around it. It is perhaps near the door where it is subjected to frequent and sudden changes: or near the fire where it was rapidly dry and moist by turns; or in partial shade that induced defective growth; all this should be remedied. In desperate cases sulphur water proves an excellent remedy. Flour of sulphur is mixed with water and syringed over the plants. Dry sulphur peppered through a sandbox, would do as well, if the plant is syringed first—the water is not to "dissolve" the sulphur, but to make it stick to the leaves. When sulphur is used in this way it is important to success that the house be kept very warm for a short time, as it is the sulphurous fumes given off that does the work of death. Of course sulphur must not be suffered to ignite, or the sulphurous acid becomes sulphuric, and the plants as well as insects suffer. Constant cleanliness is important to healthy plant growth. Air should be freely given whenever the external air and that of the plant house is about the same, at other times it is dangerous.

A few nice plants will always be more satisfactory than a mass of crowded skeletons. Such plants as pelargoniums, calceolarias, cinerarias, &c., when properly treated, make such plump and happy looking objects, that the owners of such would not exchange them for a houseful of the pictures of misery so often exhibited. The secret is to keep them growing as much as possible, as near the direct light as possible, and as bushily as possible. As the pots becomes filled with roots they are carefully shifted into pots a size larger, and when these are filled again repotted into others, until a few weeks before their time of flowering. A thoroughly practical hand will keep them in very small pots, making up the loss of nutriment by applications of manure water, and carefully watching the signs of dryness in the soil, for the exact moment when to apply, but our remarks are not intended for the educated gardener, but for those to whom a little knowledge often proves a dangerous thing. The bushiness of a specimen is made by pinching off the strong leading shoots, and training the weaker unstopped ones out to the edge of the pot. This used to be accomplished by a bundle of stakes, making the plant look as uncomfortable as an old time drunkard in the pillory —the modern plan is to fix a band of twisted bast matting around the rim of the pot, and from this lead light invisible strings to any desired part of the plant.

VINERIES AND ORCHARD HOUSES.

At this season of the year, one of the most usual subjects of attention with many parties is the preparation of a vine border.

It was once supposed that, as the vine is well known to be a gross feeder, the border at its formation could not well be too rich, and consequently, when such an arrangement was in progress, all the dead horses, dogs, and animals that could be found for twenty miles round, brought very high premiums. But the practice has fallen into disrepute; not because it does not possess some merits, but because, like many other good things, it has been overdone.

Very much of the success of your vine border will depend on the vines themselves; a statement which will appear paradoxical to many; but it is a fact, that so long as the plant remains healthy, and the roots push actively and vigorously, the soil of a grape border can scarcely be too rich, and it is only when, from whatever cause the vine becomes unhealthy, and the roots diseased, that a highly nutritious border adds to the injury and makes the matter worse. Hence, the danger of too rich a border in the hands of the inexperienced, and the value of caution on the part of all in making a new experiment.

Keeping in view, therefore, that the first essential of successful grape culture, is the production of an abundance of roots, and their healthy preservation afterwards. The first great principles of subsoiling and draining must be sedulously attended

to. If the subsoil is retentive, a drain, at least three feet in depth should be made all around the proposed border, and should be led with a good fall into the nearest outlet. A good warm subsoil is very important in grape culture, and draining is one of the best ways of securing it, as when the rain can readily penetrate through into the subsoil, the warmth at the surface in the spring is carried rapidly down into the soil, and is very advantageous at the growing season. Too much attion can scarcely be given to this matter. The drains may in part be constructed of bones, which will serve the double purpose of affording nutriment, and warming the soil at the same time.

Where the soil lies naturally low, it is often judiciously the practice to elevate the border considerably above the surrounding surface, which effects much the same purpose as deep draining accomplishes so successfully.

As to soil, where choice can be had, we think there is nothing preferable to the surface of a pasture field, taken off, say two or three inches deep, and to have with every three loads of it, one load of stable manure, thoroughly decomposed—say two years old hot-bed manure incorporated with it.—Any richer materials that may be at hand may be deposited at the outside of the borders. When the vines get older, and the roots strong and hungry, they will then find, and not despise, whatever delicious morsels may thus be in store for them.

As to the width of the borders, we have always thought sixteen feet ample, and in cases where space was an object, we should be satisfied with much less; as, where the roots can be healthily maintained, good food can always be supplied.—Indeed, ideas are fast changing in this respect. We well remember the time when it was universal to throw away a pot vine after the fruit had been cut, but now, modern practice will produce good grapes several years in succession from vines in the same pots.

Where it can be effected, it is better to have the vine border run under the grapery as well as along on the front.

Those who have been experimenting with the detached and divided borders, will probably find the soil somewhat exhausted and as soon as the leaves decay and the pruning season arrives, the surface soil down to the roots, and along the sides of the cases as low down as can be reached without injury to the roots, should be taken out and replaced with new. No one can accuse us of not allowing the advocates of these borders every chance of explaining their views in our columns, while we have uniformly advised our readers not to engage too largely in the experiment, until the chief advocates themselves should furnish us the "facts" and the "figures" of their success; as Fox Meadow and other advocates of wide borders have done with theirs. There are some advantages in the detached and divided borders certainly,—just as there is in the pot culture of grapes. It is in fact nothing but pot-culture on a large scale, with but *square* pots instead of *round* ones. For general use, good borders will probably never be out done by an system of pot-culture.

With regard to pruning the vine, it must not be forgotten, that what is done at this season, is with the object of making the plant push with greater vigor next season, looking forward also to the future shape and form that such pruning will cause the vine to assume.

Many prefer to have always a good succession of young canes, as bearing wood. The old wood is cut away every year entirely to a new cane which has been carefully trained up from the base during the summer, is now made to replace the old shoot; but this kind of pruning has to be attended to in the summer season more particularly, and need not be further referred to at this season, except to see that the cane is shortened down somewhat, according to its strength; usually being suffered to occupy about two-thirds of the rafter.

Those who prefer very large bunches, and who dislike to have their vineries crowded with "wood" during the summer, usually train up a single cane to the rafter, which is ever after retained permanently there; and the side shoots, which spring out yearly and bear fruit, are annually shortened in to one eye at this season, and push again, and again bear the next.

There are many modifications of these two systems of training and pruning, all with various advantages and with their several champions, which those who aim at perfection would do well to study, and to which there are several interesting volumes specially devoted.

Communications.

PEACHES IN NORTHERN LATITUDES.

BY MR. JAMES WEED, MUSCATINE, IOWA.

To discover some practical means of averting the many injuries which result from severe winter, late spring and early autumnal frosts, sufficiently simple and cheap to be generally available, has been

with us, for many years, a very important desideratum.

The plan matured we designate a ridge and furrow system of protection. For a particular description and details, those interested are refered to advertisements, illustrated circulars, &c. The general reader may, perhaps, be interested in a brief explanation of plans and principles involved.

We plant four rows of trees four feet apart and two feet apart in the rows, ranging north and south. Between the middle rows we place a fixed span trellis four feet wide at the base and twelve feet high at the apex or top. Just outside of each of the outside rows we set a row of short posts, one to two feet high and six feet apart. Boards one inch thick, six inches wide and of sufficient length to reach from top of the posts to the centre over top of the fixed trellis, are hinged to the posts by a wooden pin through the board near the base and through the post near the top, as rafters. Two rafters hinged to the third, fifth and thence to every alternate post, one on each side, disposes them in sets of three each, with the thickness of the post between them. On each set, we nail thatching strips, twelve feet long, and thatch well with straw on both sides. This makes a section of double straw roof, with a shut air space of six inches in the centre, which will shed rain on either side.—The sections when thrown together over the fixed trellis form a continuous roof, embracing twelve feet of ground and the four rows of trees;—the middle rows being trained to the fixed trellis, as single cordons, and the outside rows, in the same manner to a hinged trellis, which in winter is thrown over with its trees against the fixed trellis. Suitable doors in the gables complete the enclosure. These structures placed, say six, eight, or twelve feet apart, and in number sufficient to embrace a breadth of ground in economical proportion to its length, present the appearance in form, of the ridge and furrow roofs used in glazed structures. The ground between the several enclosures, and to a suitable distance around the entire plat occupied, is heavily mulched with straw, leaves or other non-conducting material, to prevent frost from penetrating underneath, and when onced placed is suffered to remain from year to year, enough being added every fall to make good the annual loss by decay.

Trees, thus housed in, are easily protected against any degree of cold they will not safely bear, and if desirable, the thickness of the straw covering may be such as to exclude frost altogether; they are wintered in an equable temperature, as much protected against injury from too warm weather, which sometimes occurs in winter, as too cold;—they can be easily ventilated in mild weather and advanced or retarded in their spring growth, as may be desired.

As spring advances the sections of roof are thrown back to back over the mulched spaces, the trees being left in their winter position, so that in case any danger of frost occurs, they can be again closed over them. When all danger of frost has passed, the movable trellises, with their trees, are turned over to their summer or fruiting position, and secured to arms projecting from the roof.

In this position the trees are opened to the greatest exposure to sun and air, and at the same time, now occupying the valleys, are protected by the ridges, against cold currants of air and high winds,—a consideration of the utmost importance in the culture of the grape, and of the great benefit to most other fruits.

This mode of protection, it will be readily seen, has a wide application and is admirably adapted to rows of dawrf trees trained as pyramids, and to the Grape, Blackberry, Raspberry and Strawberry as usually cultivated.

PLUM KNOT.

BY MR. A. SKEAN, POTTSTOWN, PA.

Please ask your scientific correspondents who contend that the Plum Knot is a disease of the tree to look very closely in their future examinations, and see whether they cannot find the crescent mark on the very new excrescence. They say that they cannot find a nidus therein,—this may be true and yet prove nothing. You know that a Doctor physics the human machine, generally, before he commences a regular course of treatment—that the gardener prepares his lands before he plants, and that the fish gathers up a large heap of pebbles before she lays her eggs, &c. The curculio doubtless understands its business, and gets up a knot before planting. A knot is something like a fruit,—there is a growing and rising all around it. Were the egg deposited at once, when the wood is stung, the sap would, most likely, injure it. As far as I am aware, the eggs of insects and of serpents are not poisonous, in themselves, yet any one knows that their stings and bites are often so; therefore the nidus would not cause the knot—but the sting. Again finding knots late in the season don't exonerate the snouter,—you will find the curculio worm in late plums, and so small that they can hardly be seen;—these after scars are a kind of abortion. I am convinced too that any tree can be saved by

taking the knots off in time; this would hardly avail where the tree is constitutionally defective.—Let us hope that we may all live to see the day when Mr. Rathvon gets up an expedition against the rascals—for *culinary purposes.* Had we the Root Digger Indians here, from California, they would be a luxury to them. I have seen them eat worse things "nor that." I had contemplated saying nothing more about the curculio, but I find it necessary to combat wrong scientific and professional notions—for if "let alone" they become a sort of guide, however erroneous.

STRAWBERRY GROWING.

BY MR. DANIEL TOWSE, MT. WASHINGTON, PA.

NOTICING from time to time extravagant accounts of the productiveness of the Strawberry, I determined to try how far I could verify them by actual measurement; accordingly on the 30th of June, 1860, I set a few runners of the Wilson's Albany into pots, I then had a strip of trenched ground. about 4 feet wide and 39 feet long, thoroughly forked over, as the ground had had an over dose of coal and ashes and salt the season before, to connect that as much as possible, I covered it with fresh stable litter, about 1½ inches deep. On the 25th July, finding the young plants well rooted, I planted them in single row down the middle of the strip 22 inches apart, drawing the manure back, and digging or scooping out holes about 6 or 8 inches in depth and width, and throwing that soil back and filling around the plants with pure soil from another place, for fear of the soil being too sharp to come in contact with the roots. It took 21 plants to fill the row. I then watered heavily, using about 20 buckets. They soon started and grew without cessation till fall, with the exception of one plant, which died, and another that was small. They averaged 16 to 18 inches in diameter. So far they had shown but little disposition to throw out runners.

About the 10th November, covered them lightly with long straw. In the spring as soon as the ground was fit to work, I dug the soil deep and rough on each side of the row, but not so close as to disturb the roots. On the 20th May they commenced to throw out runners rapidly, which were pinched as fast as they appeared. By this time there were 19 plants that averaged 22 inches across,—one plant measured 26 inches.

On the 8th of June there were only 18 plants to pick from, one of the plants full of fruit beginning to wither, from the roots being eaten by grubs.

The following is the account of the picking:—

June	8th	0	quarts	52	hundreths.
"	10th	1	"	06	"
"	12th	1	"	0	"
"	13th	1	"	60	"
"	14th	2	"	41	"
"	15th	2	"	45	"
"	17th	2	"	63	"
"	18th	2	"	05	"
"	20th	1	"	20	"
"	21st	1	"	24	"
"	22nd	1	"	02	"
"	24th	1	"	04	"
"	26th	0	"	74	"
"	28th	0	"	56	"
July	1st	0	"	41	"
"	3rd	0	"	23	"
Total		21	"	44	"

Now counting the actual space occupied by each plant averaging 363 inches, at that rate the product of an acre of ground would be 643 bushels.

Plants of the size before mentioned would require the rows to be at least 32 inches apart for the operations required among them, and avenues to carry off the rain which would bring the number of plants on an acre to 8175, yielding 260 bushels instead of 643. The question may be asked, if by taking great pains, can the above mentioned quantity of berries be taken off an acre as a common thing. From my experience I would say, no, for the following reasons:—1st, We don't know the exact chemical and mechanical requirements of the soil, to fetch the strawberry to its greatest development. 2d, The seasons are sometimes unfavorable. 3d, The plants may not always be as vigorous and healthy as those that I planted. 4th, The plants are liable to be injured by grubs, &c., and the fruit by birds and insects. 5th, A large patch of strawberries necessitates the hiring of a number of pickers, many of them would be rough and unskillful, injuring the plants so much as to probably reduce the quantity of fruit, one fourth at least.

MANURING.

As far as my observation goes, those varieties that are found best for field culture, often produce a poor crop if heavily manured, at other times, as was the case with the Albany before mentioned, they will produce one heavy crop and then are so exhausted that the few feeble runners that they throw out are not fit to plant.

Other varieties that probably originated in good garden soil I have found to yield the best crops for 3 seasons in succession in a soil where the sod was turned over and manured at the rate per acre of

60-two-horse loads unrotted stable manure, 50 bushels coal ashes and 1 bushel of salt the season previous to planting

All kinds that require a rich soil require winter protection, clean straw is the best, as manure is too stimulating, and all kinds will do best in beds, if you dispose the old plants so as to fill the beds with young plants by the 20th July, then stop all runners so that the plants may accumulate strength to fruit next season, and allow ample space between 7 or 8 inches for the smaller varieties and 15 or 16 inches for such as the Longworth's Prolific.

On our soil the Longworth, if allowed to grow only 7 or 8 inches apart, smother each other so as to produce next to nothing.

FAST GROWING TREES FOR LIVE FENCES.

BY A "FAST MAN" OF ILLINOIS.

GOOD for you, *Mr. Monthly*. You have hit the right nail fair on the head this time, and no mistake.

"He who plants Pears
Plants for his heirs,"

So it is said, but I'll wager Brindle, my best cow, against any Eastern Scrub, that no live Yankee ever made that couplet. I have no objections to a portion of my "pears" going to my "heirs," but if I can't go "shares," let them whistle for "theirs."

Slow fences are of the past slow age, whether made of *sloe's* or any of the *quicks*, and quirks that may suit the mother sod. If there is any way in which you can make them hurry up *felo-de-se*—Latin I believe for "cut-their-sticks"—suggest the happy thought to them Mr. Editor—dear Editor—dear good Editor—for the love of "yours most truly," beloved Editor—do!

Though like Amasa I "have taken you by the beard" (all Editors have beards I believe) and asked, wistfully it is true, "art thou in health my brother,"—unlike Amasa, I will not "smite" you under the fifth "rib," but rather tickle you somewhat, for I would have you laugh with me, more heartily than you did with your other correspondents, for who would plant a hedge of Osage or Locust, when he could get one of Willow or Poplar in half the time? Don't fear I am decoying you into a "tickly bender"—I have given up such pranks since I bade adieu to the dear old Pennsylvania school-house, many years ago. In plain language, easy to be understood, let me say there is no humbug about the willow hedge—come here and see, and let him that doubteth come here and see also.

Yet it is only by fire that we can bring out the true metal, and through the fire of opposition the silvery streams of the white willow is now pouring in this section. One of its adversaries triumphantly winds up a "finally" in our "*Prairie Farmer*," with the question "if this willow is *the thing* for a living fence, why has the discovery never been made in the old country, where it and the Hawthorne have stood side by side for ages?" Why, indeed! Why was it left for our State to invent the reaping machine, when mechanical superiority had been the boast of the old country for ages? Why was it left to us to *succeed* with Monitors when Cole's turrets were "well known" to the old country so long? Why was it left to us to show that an universal ballot-box, takes away the right of a people to armed revolution, and is the only principle that can unite a people of the most dissimilar political views and national origins, against the most powerful attempts at revolution the world ever saw; when the "most enlightened" of all the old countries would have been "shivered to bits" by a month's task of the kind? Why—but never mind—if they chose to sing

"Let the White Willow grow as it will
We are for the Hawthorne still,"

let them quack until they "cwak their jeeks" and let us choose the wiser and better part, and believing time to be money, let us make money by getting a good hedge in the shortest time.

But "the pen is mightier than the sword"—certainly, so at least with me, for I don't like the neighing of steeds nor the din of battle; while my pen will run on with me in spite of myself, for I took it up merely to say unto thee, friend Editor, "say a good word occasionally for the white willow, and fear not."

[Our jovial correspondent "well nigh persuadeth us," but we would "not quite;" for as we have understood the white willow hedge business, it is to make a fence, furnish fire wood, fence rails, osier for baskets, protection from winds and we know not what. We never had faith in any omnibus contrivance. Our experience is that, if we make a crutch of our gun, the muzzle gets stuffed with mud.—ED.]

SOME REJECTED FRUITS.

BY W. R. PRINCE, FLUSHING, N. Y.

THERE are some varieties of fruit demanding a more than ordinary interest, in regard to which I desire to make some short comments.

I have in my grounds the White Magdaline free-

stone peach and the Fortunatus cling, which for 20 years have withstood the yellows, although three generations of other varieties planted near them have perished from that malady. I therefore recommend them with confidence. You are doubtless aware that all yellow fleshed peaches are known in France under the title of Alberge, and also that their characteristic is acidity, whereas that of the white fleshed peaches is sweetness.—We have two improved and exceptional varieties of the Alberge or yellow fleshed class, which are sweet—Orange Melacoton and Spring Hill Melacoton, both highly estimable.

It is surprising that the market peaches are confined to so few varieties, and that they should comprise only those of which the trees are grown in great quantities in the limited collections of New Jersey; thus ignoring the existence of the superior varieties, such as the Early and Late Admirable, Bourdine, Gorgas, Barrington, Early Purple, Grosse Mignonne most delicious, Ninette, Scott's Magnate and Nectar, Malta, Red and White Magdaline, Chinese Honey, Lady Parham and others, which produce fruit incomparably superior to the acid yellow peaches which glut the markets. At the conclusion of the season, we find the markets woefully deficient—it being confined to the flavorless yellow Smock's free, and to the Heath cling in an immature state, whereas this last if ripened on shelves for some days as we do pears, is extremely delicious. In lieu of the former, if the Excelsior, a splendid golden freestone, Yellow Admirable, La Grange, Snow White, Baugh, Baldwin's Late, Edward's Late White, Lady Parham, Montgomery's Late and Pride of Autumn, the last seven all white fleshed freestones, and with the two preceding, all ripening in October, and in addition to the Heath cling, we raise crops of such splendid October ripening clings as the Monstrous Pompone, October Scarlet, Donahoe, Horton's Delicious, Hull's Athenian, Jackson, Stephenson and Tippecanoe, which are such great favorites at the south, we shall prolong the season of this healthful and delicious fruit by such high flavored varieties, as have caused Italy and Alabama to be each called "The Paradise of Peaches."

Regarding Apples, I called the attention to the fact at the recent Pomological Convention, that the very best early apples we cultivated here, seem to be unknown in many parts of our country.

The three best for table are Blinkbonny, Garretson and Sine Qua Non, and the very best early, for cooking is Corse's Favorite. I may refer to the finest autumn and winter apples hereafter, such as are little known.

Of Apricots there seems to be a lack of information, and a doubt as to their hardihood and successful culture, when in point of facts, the Black or Purple apricot is a native of Siberia and as hardy as an apple tree, the Breda, Alsace, Peach or De Nancy, Royal and the Lafayette which is by far the largest of all, may be confidently relied upon as to hardihood and abundant crops. I will conclude for the present, by referring to some nuts and figs. About the year 1790 Wm. Prince, my late father, imported from Mr. Thompson of Mile-End, then near, but now part of London, whose Nursery was deemed at that time the best in England, a collection of forty varieties of pears and some other trees, among which was the "Double Madeira Nut or Noyer de Jauge," and the original tree is still standing and in full bearing, in front of the house of Dr. Allin, on one of our most populous streets (then part of the Nursery.) Seedling trees from this one, are in bearing in this vicinity, and the fruit of enormous size and of excellent quality. We have a large number of trees in the Nursery of the third generation, and they seem as hardy and vigorous as the common Hickory. The Chinquapin so plentiful around Washington, of very dwarf habit, whose small but agreeable nuts so many visitors have recently tested, I wish to refer too, while speaking of some great improvements made. Wm. Prince about forty years ago hybridized this dwarf Chestnut with the large fruited French Chestnut, by which he obtained a low growing tree with fruit double the size of the Chinquapin which has been since called "Prince's Dwarf Chestnut." I hybridized this latter anew with the large French Chestnut, and I now have the second generation of these hybrids in full bearing, it having formed small trees of about twelve feet in height, with fine sized fruit, fully double the size of its hybrid parent, and four times the size of the original Chinquapin. A nut shrub of great hardihood and deemed of great importance in France, Spain, Germany and England, has been sadly neglected among us. The Filbert, which will grow on any soil, exacts no special care, and is exceedingly remunerative by its abundant crops. One of the best is the Piedmont Filbert, extensively grown in france, but all the other varieties may be successfully grown here.—The Fig tree has failed to receive merited attention in this and other Middle States, on account of a misconception as to its hardihood. The trees require no more covering or protection than is given to countless acres of Antwerp Raspberries. There

are about fifty varieties, of which more than half may be grown here, and the whole number may be successfully grown around Baltimore and Washington, and in the lower portion of New Jersey.—There is no reason why this delicious fruit should not be grown extensively for the markets of New York and other more Nothern cities.

MOSS BASKETS.

BY MR. L. WYMAN, JR., BROOKLYN, N. Y.

In looking over the pages of your last number of the *Gardener's Monthly*, I noticed you omit nearly the whole of the article upon "*Chamberlain's Moss Baskets.*" I regret this omission, as the article was prepared especially for the pages of your journal, and at as early a day as it was possible to comply with your written request for the same.

From your editorial remarks, you evidently have received an erroneous opinion of these Baskets, and of the manner in which they are constructed, as also what the *patent* embraces and covers. Believing that the Editor of the *Gardener's Monthly* would be the last one to do an intentional injustice to a fellow laborer, in the same great field of Agricultural inquiry in which he occupies so prominent a position, he will undoubtedly and cheerfully give this communication a place in the December number of his valuable magazine.

Mr. Chamberlain has made no attempt whatever to envelope in undue mystery his discovery, he has rather sought publicity by exhibition of his Baskets, before quite a number of the Horticultural and Agricultural Societies, at their different exhibitions and fairs the last fall in quite a number of the States.

He has always given as far as possible all the information in relation to his invention, and its merit, that was in his power to do, without communicating to the public the component elements of his fertilizer.

Mr. Chamberlain believing, and many think justly so, that "the laborer is worthy of his hire," and that having already expended much money and time, in the discovery and perfection of a valuable patent, now that its merits and value is beginning to be appreciated by the public, he has the right to vend the same, at least until he shall receive in return again some portion of the money he has expended in the perfecting of this beautiful floral gem.

Thus far the patronage of the public has been such as to satisfy Mr. C. that "respectable people" who have already given their unsolicited testimonials to the value of his invention, have only to *use their eyes* and their *judgment* while examining these Moss Baskets, to satisfy themselves, that these Baskets are not only a verity—but that Fruit, Plants and Flowers have been, and are now growing in many places, in his Baskets, and that in not a single instance can a purchaser be found, who does not fully endorse the *above*.

There is not the slightest mystery about these Baskets, they are *constructed* after the manner specified in the patent, and protected by the same.

The *Vitadoran* or Fertilizer is also patented, both being dependent, one on the other, and they are designed to be used together. Any further information upon this subject will be most cheerfully given.

[Our "erroneous opinions" or "injustice" are not very clearly made manifest by this communication, and we only justify our publishing it at all, in the hope that Mr. C. will be satisfied we have no wish to "crush him out."

Mr. C. claims that he has made a new discovery. We ask in what it consists? Mr. C. replies that *that is a secret*. We doubt that there is any thing more than skill, and refuse to believe in this new discovery. Mr. C. retorts that we do him "injustice," for indeed it is *a great secret*, and that he has it *patented*. All we can say is, that if *secrets* can be *patented*, we do indeed hold "erroneous opinions."

Mr. C. refers us to the "exhibitions of his Moss Baskets" and so on; but we do not see that the patent consists in the exhibition.

If A. get a patent for a swinging gate, it is the *means*, properly specified, for which he gets a patent, and not for the gate in the act of swinging. We do not see what Mr. C. has to fear from an explanation of his "discovery"—his *patent* is sufficient to protect him in the "hire" of which he thinks the "laborer is worthy." It is this air of mystery which we repeat gives to the whole proceeding an appearance of charlatancy, not favorable to Mr. C.; and we say it with regret, as we were the first Horticultural magazine to call attention to Mr. Chamberlain's *skill* in these matters; and have, we think, done more than any other journal to direct public attention to Mr. Chamberlain's real merits as the introducer of a really novel and interesting mode of growing fruits in baskets; but when Mr. C. pretends to *patent a secret*, we have a right to ask for the "further information," which seems *not* to be "cheerfully given."—ED.]

STORING VEGETABLES AND FRUITS FOR WINTER.

BY C. H. MILLER, GARDENER TO D. R. KING.

In taking up this subject, I am very much afraid I shall fail to do justice to such an important matter, for I deem the preservation of fruits and vegetables of as much importance as their rotative growth and production. In fact, *more* so, for when taken into consideration, who can estimate the loss and mortifications attending the total, or even a partial loss of either—a loss that cannot be remedied for a season at least.

The best and most economical plan for the storage of vegetables, such as beets, carrots, turnips, parsnips, &c., is putting them in the open ground. After having tried various ways of packing them in cellars, barns, sheds, &c., also in well constructed root-vaults built for the purpose at great cost, I have come to the conclusion the out-door plan is the best.

Potatoes even, although much more convenient to have them in cellars, are not so well preserved as in the mode of pitting them.

Generally the atmosphere in cellars is to warm, and the frequent access of fresh air induces vegetation, which soon impairs their nutritive qualities. A very important matter in connection with the successful preservation of potatoes, is, their surface should be kept moist and the atmosphere which surrounds them as little above the freezing point as possible. This can easily be accomplished by adopting the method hereafter described.

Last season I pitted a quantity of seed potatoes in the open field, their only covering being about two inches of straw and six inches of soil. They were taken out the pit the first week in April, in good sound condition, no sign of vegetation and none rotten. I merely mention this fact to show the small amount of soil required to protect them from frost, and preserve them in good condition. Beets, carrots, turnips and parsnips, require pretty much the same treatment, great care should be observed in their gathering, throwing aside any that are unsound, cut off their tops about an inch above the crown, and allow them to dry for a few hours. Select a convenient and dry spot of ground, rake level the surface, pack the roots in long ridges about five or six feet wide at the bottom, giving the whole a roof-like shape. Then cover all over with a good coat of straw well drawn out. Dig a trench around the pile, covering the whole with the earth thus thrown out. I prefer a moderate coat of soil, which, after being beat firmly and evenly with the spade, should have a top covering of leaves and long manure which will prevent the soil from being frozen hard. When required for use, rake away the leaves on the southside, and an opening is easily made. The advantage of this plan is, the roots are not subject to vegetate or become stringy in spring, which they generally do in cellars. I would mention that parsnips require very little covering, as any amount of freezing does them no harm. Radishes, salsify and horse-radish may be packed away in cellars, covering them with sand to keep them fresh. Onions require a cool airy room, frost does not hurt them, moisture rots them, and warmth will soon cause them to vegetate, tying them into bunches and hanging them up is a good plan, burning the fibrous roots with a hot iron will prevent their sprouting.

To preserve cabbage during winter and spring, choose a dry day to take them up, turn their heads downwards, and let them drain awhile. Select a dry and sheltered piece of ground, open a trench with the spade or the plough, place the cabbage on their sides in the trench, roots downwards; open another trench, throwing the earth well on the roots and stalks, treading it firmly with the foot; place another row of cabbage as before, and so on until all is done. As soon as severe weather commences, cover with leaves or straw litter. In the neighborhood where I now reside, thousands are annually done in this way, and keep beautifully fresh and green till spring. Another and better plan for savoys, brussels sprouts and kale, is to erect over them a temporary kind of shed, that will keep them dry, and which should be open at the ends in mild weather, for the circulation of air, and closed when the weather is very severe.—The advantage of this plan is manifest, as the action of the sun and frost is what induces permature decay.

Celery is one of our most prized esculents, and various ways for its preservation have been recommended from time to time, in most of the Horticultural journals. My plan hitherto has been to cover the ridges well with leaves and long stable litter, which prevents the earth from freezing, and when wanted for use, which is almost daily, is easily accessible.

I now come to the very important matter of keeping fruits, the after treatment of which is of quite as much importance as the selection of good kinds, or the study of the relative merits of their growth and production. All persons engaged in the cultivation and production of winter fruits to any extent, should provide themselves with a fruit room, and those who have a commercial in-

terest in view, should always have a packing room attached.

The pear is one of the most important winter fruits, and great care is necessary to preserve them in good condition. Various methods are being practiced and recommended, such as packing in barrels, storing them away in closets and cellars.—Some bury them in the ground, and I have heard of their being packed in tight barrels and sunk in the middle of a pond, and all are said to have kept well. But all these plans I think but a makeshift at the best, and not to be compared with a well regulated fruit room. I will not presume to recommend what kind or style the room should be built, this may be done according to the taste and convenience of the owner; but I would suggest the walls of the room be built hollow, that is to leave a space, say three or four inches between the outside and inside walls. The air occupying the space between the two walls, could be easily heated, by running the pipe from a stove, placed in the packing room, or if preferred, by a flue running the entire length of the hollow space; the air thus heated in the enclosed chamber would remain warm a long time, in a great measure avoiding the fluctuation of temperature so injurious to the fruit.—The roof of the building should be what is called a double roof, with ventilators placed in the eaves and on the ridges, for the purpose of maintaining a current of air between the two roofs. Cold air drains should connect with the chamber before mentioned, for the purpose of lowering the temperature when necessary.

The drains and ventilators to be closed in cold weather. The interior of the room should be fitted up with shelves, with a passage through the centre. Windows may be placed in the roof or the gable end, for the purpose of admitting light and air in mild weather, but should be closed and covered when cold; light should be sparingly admitted at any time. Arrange the fruit on the shelves in rows, first placing a layer of clean straw, then a layer of fruit, with the stems uppermost: add another layer of straw. The next layer of fruit should occupy the hollow space formed by the rows underneath. Five or six rows may be placed in this way on shelves; allotted spaces should be allowed for each kind of pear, the name of which should be placed on the edge of the shelves, with the date of the month they may be expected to be ripen. Apples will keep well on the floor or bottom shelves and do not require straw between them.

Grapes should be kept on the vines as long as possible, and when removed may be packed in boxes in dry sawdust, bran, or moss, and placed on the shelves in the fruit room, I think bran best, having succeeded well myself with this latter material. Black Barbarossa has been known to keep in good condition till the month of June in this way.

In conclusion, I would remark that I believe a *dark*, *dry* room and cool temperature essential to the successful preservation of fruits. To prolong the period of ripening of pears is an important object, as they will not keep long in good condition, after being fully ripe.

FUNGUS IN CUTTING BOXES.

BY S.

I should be very glad if some of your correspondents would give their experience with this disagreeable pest. For some years I was as near distracted as ever I wish to be. I had no luck at all. Every thing died that I put in, and no help seemed for it. A couple of years ago I saw in the *Monthly* some one's experience that by using old sand in which the fungus had run out, nothing of the old stuff would appear again. Last year I tried it and had sweet success. It was really delightful, and I thought every years subscription I had paid for the *Monthly* filled up full in this one fact. But alas! this year, on the same system, my hopes have had an awful disappointment. I never fungus had so bad. One morning it was like a snow storm over the whole bed, and not ten in a hundred were alive. This is an awful scourge to me, and do let us have all the light we can on it.

I will tell one thing I have learned by it, at any rate. Wise men say fungus never attacks healthy vegetation. Tell 'em I say this is all wrong. No cuttings could be healthier than mine, yet the fungus sweeps straight ahead like the waves of a great sea, swallowing up all good and bad that comes before it. I would as lief pretend a healthy man could noc be carried off by a grape shot, as this notion, for hav'nt I seen it in my cutting bench? and shan't I believe?

GRAPE CULTURE.

BY DR. J. W. PUFFER.

ENTERTAINING only the kindest of feelings towards Mr. Bright, as one who is doing much to promote the cause we both love, I regret his supposition that my article was written in a fit of irritation. Had he stated a fit of irrigation, it would have been reasonable, as I had a great many last summer. But it was written weeks after the vines were laid

But it was written weeks after the vines were laid down for winter, and any fits, and the effects thereof, had passed away.

If I understand Mr. Bright, he claims the merit of originating a plan of growing grapes in inside borders, notwithstanding Mr. William Saunders, gave to the public, in the *Horticulturist*, the same thing months before. My vines are trained on the plan represented in the *Horticulturist* for 1859, page 420. The vines have soil enough, each vine having over 26 cubic feet.

It would seem that Mr. Bright is willfully ignorant of the construction of my border, having stated that it was built after Mr. Allen's plan. The only addition being a cord of muck.

I will not for a moment suppose Mr. Bright has never read Mr. Allen' s excellent work on the "Culture of the Grape." By turning to page 43 and 44, he will see precisely and exactly, so far as one man can follow the directions of another, how my border is constructed. I think Mr. Bright will agree with me, that a large majority of the successful cultivators of the grape, have, and do cultivate an open, porous border, and so constructed as to remain so for years. See Allen, page 46, 59, 72, 89. Chorlton, page 53 to 58. Bright, page 33, in speaking of soil for grape vines, says: "The thorough preparation of the soil, for the grape border, or the vineyard, by plowing, &c., is probably of more consequence than that of manuring, and by *thorough preparation* we mean more than the reader, unless he is a skillful cultivator, has any idea of. We mean the most perfect and minute division of the soil that is possible, so that it shall be left at last as light as bolted flour. It is in such a soil as this that the grape vine delights. A soil which has been worked over and over, in a partially dry state, a dozen times at least, and allowed to sink into a beautiful consistency by its own gravity, without any pressing or treading."—Any one who has a border like the above, will find, on page 78, *Gardener's Monthly*, of this year, that Mr. Bright finds it desirable "to make inside borders very compact, (not light and porous,) and advises packing the soil when dry, very firmly and closely with a rammer." Consequently his border is not properly constructed yet. In relation to ventilation, ought one to infer that I consider free ventilation in hot days important, because I want a four foot ventilator? I think not. Mr. Bright, in his work on page 58, says: "To attain the most perfect success in vine culture, &c., the border should be dried and cooled." In my grapery, with all the ventilators open, the thermometer stands in bright days during September, October, and November, at 90° to 100°. If there is any better way to cool off the border than to add two feet to the ventilator, I should like to hear of it. Perhaps some one can explain how to keep down the heat to 55° in April; see Bright, page 68.

Mr. Bright's allusion to the loss of foliage, was as uncalled for as ungenerous. Had I assumed to teach by advocating a plan? Did I claim to be even a *good* cultivator of the grape? I chose to give *all the facts*. Did Mr. Bright never get caught by the *frost?* The preceeding six months growth had nothing to do with the frost, and the result this year from it. I have an inkling as well as Mr. Bright. A result that may happen at any time in a *cold house*. People ought to be constantly reminded of their duty ; if we inform a person about building, that a flue is desirable, he will think it may be dispensed with; but to tell him that without one he will lose foliage and fruit, and he has a flue built. This of course refers to the latitude of Boston, and farther North. My impression, based on a three years trial, of a border constructed as stated, (and in making another, I should use no rams in or on it,) and I believe on correct principles, that with a heavy mulch, large evaporating tanks, copious waterings, and vines trained under the rafters, persons *may* meet with a *good* degree of success; but for any one situated as I am, with but a few hours a day, snatched from professional duties, I consider an outside border far preferable.

Apple Scions.—Scions may be cut at any time between the falling of the leaves in autumn and the starting of buds in spring. When taken off in the fall, one method of keeping them is to bury them a foot or two deep in the earth. I once set several hundred which had been kept in this way. They appeared as fresh when taken from the ground as those recently cut from the tree—nearly all lived and made a good growth. In this case a trench was dug and some straw laid at the bottom; the scions laid on and another layer of straw put over them, and the trench then filled with earth. When taken from the trees in winter, my method of keeping them is to put the lower ends in loose earth on the bottom of the cellar, and put a box over them to retain the moisture.

When cutting scions, we should be careful to select first-rate varieties, of thrifty growth, with well developed buds, and from healthy trees. Scions may be sent hundreds of miles by mail, if enveloped in oiled silk to exclude the air.—O. V. Hills, in *Boston Cultivator*.

The Gardener's Monthly.

PHILADELPHIA, DECEMBER, 1862.

☞ All Communications for the Editor should be addressed, "Thomas Meehan, Germantown, Philadelphia," and Business Letters directed to "W. G. P. Brinckloe, Box 406 Philadelphia."

☞ Persons sending two new Subscribers for 1862 in addition to their own, with $3.00, can receive a copy of our First Volume, (1859) free. All persons who have paid their subscriptions for 1862, by sending two new Subscribers and $2.00, can receive a copy of the same.

GARDENER'S MONTHLY FOR 1863.

We are pleased to announce that the response to our card in last two numbers has been more spirited and encouraging than we had reason to hope. In one point it is as we feared; numbers of our subscribers we shall miss from our list forever; but the friends of the *Monthly* have exhibited so much enthusiasm, that our list for 1863 will in all probability be as heavy at least as that of 1862. To make matters still more agreeable to us, our subscribers have with very few exceptions, sent the $1.50, as if it were a foregone conclusion that this was inevitable. Nor have they done this grudgingly. "Enclosed," writes J. S. B., New-Haven, Conn., "find $1.50 for 1863. Had you named $3 it would as cheerfully been sent,"—we select as the *shortest* in letter, though not in spirit, of many we have received.

We had written a card for our last issue, stating that in consideration of the pleasing response to our notice, no increase in subscription would be made; but the great rise in price of every kind of printing material induced us to postpone a decision till now, in the hope the trouble would be but temporary, and we reprinted our first card instead.

Fearing now that this will continue for some time, we have at length concluded that in order to place the *Monthly* beyond the possibility of any depressing influence that might mar its prosperity, it will be safest to make the increase.

As it may be inconvenient, on account of the difficulty to procure fractions of a dollar, to send the 50 cents, we will credit all subscriptions for the amount sent,—those sending $1 for 8 months, $2 for 16 months—and will notify such persons when their time expires.

Now that we have decisively fixed the price at $1.50 per year, we have nothing further to say in this column than to refer the reader to the business advertisement of our prospectus on the outside page of cover.

TO GROW LARGE SPECIMENS IN SMALL POTS.

They say the world is progressive—that we are continually improving as the generation marches on. Cynical philosophers retort, that if so it is at the expense of other good points, and that the sum total of improvement does not amount to much.

This appears true in gardening. We took up a copy of Darwin's *Phytologia*, a few days ago.—This was published sixty years since. It is very little more than Lindley's "Theory of Horticulture" of the present day. One might say Lindley was but Darwin very much condensed. Lindley has matter Darwin has not. Darwin touches on things Lindley omits; but which in the present stage of our knowledge one would think Lindley might perhaps touch up as "new" in some future edition. Perhaps it is that pursuing certain trains of thought or courses of fashion, we lose sight of others which come up again in time. There are lost ideas as well as lost arts.

These are our thoughts on taking up the subject of the "new" idea of growing large specimens of flowers in small pots. It is not new, for the writer can read on memory's page, far back in the volume of early life, the whole process which he is now about to describe. Yet it will be new to the younger race, for large specimens and large pots have become a mania, to use a popular expression, which the more intelligent of Horticulturists are endeavoring to correct.

This fashion became popular through the Horticultural Society of London. Grandeur there seemed to be the chief type of beauty, and of course the larger the specimen the more merit in the eye of a judge. To such an extent was this idea carried that one of the exhibitors who made the greatest effort to be considered chief among Horticulturists, had special houses made for each of the plants that formed her collections. This was Mrs. Lawrence, of Ealing Park, whose name will be familiar to all readers of English Horticultural papers of twenty years ago.

The Horticultural Society have since discovered that however much this might conduce to the magnificence of the exhibition, it did not serve the objects of the Society; namely the holding up of an example for general imitation—a discovery in which it is still in advance of the "fat cattle" societies of the present time—and they offered premiums for the best specimens of the same kinds of plants, in pots that should be all of a stated size. This was a proper test of skill. They who had the most knowledge might excel, and not, as formerly, those who had the most house room.

We have chronicled that the Pennsylvania Horticultural Society adopted the regulation last spring, and to help along this commendable reform we have every month since hoped to make a few suggestions on the subject; but other more pressing matters of public moment have hindered us till now.

First, take a young and healthy plant—for the sake of illustration say of the Pelargonium. It is potted, we will assume, in a four inch pot and is growing freely. When the pot becomes filled with roots, it is again repotted into say a six inch, and so on as it requires into an eight, ten or even twelve. It will be by this time in as large a pot as we may think ever desirable, and the question now arises how to keep our plant healthy, and yet to never require a larger pot.

This is done by cutting away the roots; but to do so without material injury to the main plant requires a previous preparation of the top. This is to be done by pruning, and the time to do it is when there is the greatest amount of organized matter stored in the stems, which is at the period when the fruit is or should be about maturing. In the Pelargonium, this is soon after the flowers have faded away, in a peach in a pot it would be after the fruit was gathered.

All the youngest branches are shortened in. A peach would represent something of the appearance above illustrated. About one-third or about one half of the lateral branchlets being cut away. In the course of two weeks, experience has shown that a tree so pruned at this time, is ready to throw out a great quantity of new fibres. The ball of earth is then taken out of the pot and reduced very much,—in many cases one-third or one-half. Sometimes the earth is washed away entirely by having the ball soaked a little in a tub of water. It is then repotted in new soil, and in as small a pot as the roots can be conveniently put. The newly potted plants are then watered and the plants set in a close atmosphere where there cannot be much evaporation till the young roots push, which will be in a few days, when they may be treated as other plants were, repotting &c., as the roots require it until the plants flower, after which they should not be disturbed until the season again comes around for the annual pruning and disrooting.

By this process the size of the specimens can be annually increased without the pots ever being larger than the year previous,—the proportion of that increase being entirely dependent on the skill of the practitioner.

HORTICULTURE AND HUMANITY.

If there is one thing more than another that should be kept entirely separate from politics, it should be Horticulture. In the present struggle, which assumes such a personal shape to every one of us, it is almost as difficult as for an editor of a magazine like this to ignore his personality as he ought to do. Still we think it should be done, and horticulture be considered as common ground—as one of the humanities of life, due alike to loyalist and rebel, Christian and Pagan—to man in its widest sense.

Of its humanizing influence we have an instance now before us, which we cannot withold from our readers. In one of the Pennsylvania regiments, a subscriber and former contributor to the pages of the *Gardener's Monthly*, fell wounded at the battle of Antietam. Within a few feet of him, wounded in the same charge—perhaps wounded by each others bayonets—lay a soldier of a Georgia regiment. As is the custom in our service, the wounded of the enemy and our own are all treated alike together in the same hospital, and these two were carried together with the rest. Our correspondent in the last of two letters we have received from him, writes: "The rebel prisoners of whom I before spoke are all recovering, and they are for the most part friendly with our men. I may say all but one, who belongs to a South-Carolina regiment, and keeps almost entirely to himself. In talking with the one who fell on the field near me I discovered that he too was interested in horticulture, and there seemed at once a bond of sympathy between us. He showed me a pod of seed which he had gathered as a memento from the vegetation that formed his bed one night during the terrible campaign before Richmond, which I found to be the the Passiflora incarnata or wild Passion vine. That particular flower was very suggestive to us both, for each of us I am sure felt as the holy one did before us, that the cup of na-

tional misery was almost greater than we could bear, and that the vessel of agony might be passed from our lips, for we had our share at least of it, His father also has a great love for horticulture, and is interested particularly in the cultivation of the grape. On his plantation near Macon, he has a very fine vineyard, on which it was his pride to collect all the varieties of note he could get. He made me promise that as soon as possible after the war shall be over, if we both live through it, I should go down and spend a month with him, assuring me, both for himself and his father, that I should be welcomed as if we had never met on the field of mortal combat together.

I promised to try to get him a few cuttings of the newer kinds of grapes to take with him when he is exchanged, and if you can help me in this I shall be obliged. I suppose these would not be considered contraband, and that the officers will let them pass.

Some of our comrades, listeners to our conversation, jokingly said "we should be in Richmond before the next vessel with exchanged prisoners, and his cuttings would die before they reached the next rebel wharf." "Well," says he, in the same spirit, "I shall have to go nearer home to be exchanged, that's all." It has often been asked how can North and South ever be united again after fighting together as we have been; but my intercourse with rebel soldiers assures me there will be no difficulty at all on that score, if those who hold the reigns of power will only let us. Horticulture alone will be no mean restorative to this desirable consummation. I could not help noticing the different effect our little garden talk had on the squad of our comrades about us, beyond what any other topic of conversation had that had ever been mooted since I have been in the hospital. The young man tells me that Mr. Fields, the well-known nurseryman at Macon, was still with his business there quite recently."

How touching to the humane sensibilities is this simple narration. If we ever had any doubts as to the wisdom of the American Pomological Societiy's recent action at Boston, in retaining for the present all its southern names on its list of officers, until they could be heard from, we should have none after reading this. May we not wish, as Horticulturists, without expressing any sympathy for the cause that parts us, that the long agony of our parting will soon be over.

NATIONAL HORTICULTURE.

At page 240 of our volume for 1861, in an article on the disgraceful management of the agricultural department of the Patent office, we incidentally remarked on the benefits to the country that might ensue, if practical men like "Mr. Saunders or Mr. Sidney, out of the reach of political blandishments,—as Philadelphia had selected to design her public park, were at the head of such affairs."

We are pleased to learn that one of these gentlemen, Mr. Saunders, has been selected under the arrangements of the new Agricultural Bureau, to superintend the experimental garden at Washington. Mr. S,'s peculiar fitness for such a position, is so well known to the Horticultural community, that we need scarcely compliment Mr. Newton's good judgment in making the choice. We are well assured that no "tea plant" arrangements, by which $30.000 worth of stuff, of which hundreds of thousands of dollars' worth already existed in the country, to be sent to us with liberty to the collector to send all the really valuable things to England, for us to buy back, by private enterprise, will be again "on the carpet." Mr. F. R. Elliot, of Cleveland, is also engaged in the same department.

We have no personal knowledge of Mr. Newton; but if all his agricultural appointments show as good judgment as his horticultural ones, we may yet see some good arise from the ashes of this Dead Sea fruit, that has tantalized the sense so long.

For our own part, as our readers well know, we are opposed to these governmental gardens and agricultural departments—at least so much of the idea as is supposed to have a "fostering" influence on the development of practical improvement. It is opposed to the very theory of republican government, which is a reflection of the collective intelligence of the mass of the people, and not to lead popular knowledge. This carries continual change in its essential features,—a material element in the progress, happiness and prosperity of a nation; but destructive to the proper management of gardens and institutions of a teaching tendency. The blinding brilliancy of foreign establishments of these kinds however, has produced a clamor among our people for them; but the sooner they open their eyes to the fact that this is repugnant to the genius of our institutions, and can never be here as there, the sooner will gardens be established on what they can and ought to be with us—private enterprise; and on this plan we have no doubt American public grounds ought to beat the world. At all events what can be made of our national Horticultural arrangements at Washing-

ton, will now, we feel sure, have all the justice done them possible.

TRANSACTIONS OF THE NATIONAL POMOLOGICAL SOCIETY.

At the session held in Philadelphia, we went to a heavy expense to publish the proceedings entire for the benefit of our readers, employing for that purpose a steneographic reporter of our own. It will be remembered how unsatisfactory this proved to the speakers, who for nearly a year afterwards were making corrections in our columns. At the last session, we thought it would be more satisfactory to the society, and more certain to avoid our former trouble, if we refrained from publishing a report till we had the official papers before us. Some of our contemporaries have made attempts at their own reports, and already disputes have occurred as to what certain speakers did or did not say. The official transactions are, we believe, now in the press, and probably next month we shall be able to give an abstract of the most important matters. The proceedings entire should however be in the hands of every one particularly interested in Pomology, and the President's notice in another column, will show how they may be had.

Scraps and Queries.

☞Communications for this department must reach the Editor on or before the 10th of the month.

☞The Editor cannot answer letters for this department privately.

ORCHARD HOUSES.—"*Leigh Hunt*" enquires:

I propose to build a lean-to grapery; also a small orchard-house.

2. As I wish to make the rear of the brick wall look neat, (as it shows plants from the street,) is it judicious to plant any wall-creeper to grow against it? If so, which would you advise me to plant? Will such as you recommend grow well if the wall is painted?

3. Where can I best buy potted trees for an orchard house, taking into consideration my locality (near New-Haven?) Please advise the best selection of fruits for a house to contain 40, 13 to 16 inch pots; three-fourths to be peaches, nectarines and apricots.

4. Is "River's Orchard House" a good guide for an amateur in this climate? If not, who is?

5. In training my vines, should I endeavor to lead one vine in the course of time on to two, three or more rafters? Nearly all houses I have seen grow one vine to each rafter; is that the "walking cane" system I hear some writers condemn?

6. Which system of culture do you recommend?

7. Would pots or tubs made of the heart of cedar, answer for peaches, &c? Or would large paint kegs, (properly drained,) be injurious?

8. Now if you can and will answer the above questions, I will in the mean while try to find you another subscriber.

[(2.) Of "creepers," properly so called, or those which adhere of their own power, there are but three hardy kinds—Evergreen Ivy, which in this region sometimes gets killed on a southern exposure in winter, but always escapes on a northern,—the Trumpet and the Virginian Creeper. Any of these would adhere, and soon cover the wall—the paint proving no obstacle, The Evergreen Ivy and Virginian Creeper, do not, however, adhere well to smooth surfaces.

Of "vines" proper, or *climbers*, there are many beautiful things. Any of the Honeysuckles are good but the Belgian, which is too poor a grower. The "new Japan Evergreen" is by far the best for covering a wall rapidly and well. The American Wisteria is another good massive foliage plant, and its improvement, magnifica still better. Aristolochia sipho cannot be beat, where there is a large space to be covered. The "bitter sweet," (Celastrus scandens,) does not spread well, but is a beautiful plant for an upright space; and the Barren or sweet scented grape, should not be forgotten. One of the best hardy climbers for pretty foliage, interesting flowers, and a rapid and spreading growth, is Akebia quinata; but it is little known yet.

(3.) Peaches—Crawford's Early, Early York, Druid Hill, Early Newington, Eliza, George IV. Grosse Mignonne, Morris White, Old Mixon Free, Noblesse, Morris Red, Royal George.

12 Nectarines—2 Early Newington 2 Elruge, 1 New White, 1 Stanwick, 1 Hardwick, 1 Violette Hative.

6 Apricots—1 Large Early, 1 Breda, 1 Royal, 1 Hemskirke, 1 Large Red, 1 Peach, 1 Persian.

5 Cherries—1 Early Amber, 1 Belle d'Orleans, 1 May Duke, 1 Early Purple Guigne, 1 Old Black Heart.

5 Plums—1 Smith's Orleans, 1 Washington, 1 Reine Claude de Bavay, 1 Nectarine, 1 Purple Gage.

These we recommend because the writer has tried, and found them successful. There should be some others perhaps better, and we should be

glad of the notes of those who have had experience.

We have a rule never to recommend nurserymen—most large nurserymen keep them, and considering how much orchard houses are now in demand, it is singular they are not oftener advertised. We would not recommend you to get ready-potted trees, unless within a few miles of your place. They will do just as well potted on your own place, unless for fruiting the next year.

(4.) The treatment of orchard house trees are as well set forth in Rivers' as in any work you can get. Our climate will require more substantial structures than he recommends, that is all.

(5.) If you could, "in the course of time" train one vine so as to fill the house alone, you would find it a great benefit to the health and longevity of the vine. It is rarely practiced however; the usual plan being one cane to a rafter. The two main systems of pruning are the "long cane" and the "spur" system. In the former a new cane is brought up every year; in the latter the main cane up the rafter is preserved many years, the fruit bearing branchlets, being annually "spurred" in. The "cane" system is not often adopted when vines are trained to the rafters alone; but is oftenest used when nothing but grapes are grown in a house, and the vines trained all under the glass surface.

Some gardeners succeed best with one system, and some with the other,—more we believe because they may have been accustomed to it, than from any great advantage to either.

(6.) The spur system is best for those who have not had much experience, as it requires less skill than the other.

(8.) Cedar tubs do well for all pot fruits. Paint is not injurious to vegetation so far as our experience goes. Some kinds might perhaps; the safest plan would be to burn a few shavings in each tub. They would last longer for being partially charred

(9.) When you have found him, let him send on his "Queries," and if likely to prove interesting to the majority, we will try to do our best for him, as we have done for you.]

Names of Fruits.—*H. B. S., Queen Anne's County, Md.*—No 2 and 4 appear to be the same, and probably Republican Pippin. There are however so many apples of this class, so nearly alike in fruit, but differing in habit. hardiness, productiveness, and other essentially good qualities, that we do not feel sure of the name without seeing the trees also. The other kinds we could not identify, and sent them to the fruit growers' meeting, but with no better success.—From *J. G. Y., Quakertown, Pa.*—A seedling Pear, "Red Garden Seedling," a very good pear, but of a class such as Ott, Ravenswood, &c., in which are already some of such excellence, that we should scarcely regard this as a desirable addition to an already too extensive list. The Sterner Apple from the same source, appears distinct from any we know, the only defect we see in it is that we have larger apples of the same season of as good quality. In itself it is "very good."—From *F. W. Pennburg.*—Gravenstein Apple, from a tree brought from Germany. This is the same apple as we have seen in Europe, as Gravenstein, but it is different from the one grown in the United States as such. At the Fruit Growers' meeting, however, Dr. Eshleman repeated the opinion of a good German Pomologist, that the American Gravenstein was the same as the German. There is a mistake somewhere. Both are excellent apples.

Friend Meehan:—I have for your inspection and acceptance, the following apples:

A Gloria Mundi, weighing 2 pounds, from James Ecroyd's farm, Muncy, Pa.; a Paradise apple, from Henry Ecroyd, do.; two Smokehouse, do. Jacob Haines, do.; two Republican Pippins, from Muncy, Pa., from the daughter of the original discoverer and propagator, George Webb, originated about 40 years since from a tree growing in the woods.

Two apples, green with bright blush, from Jacob Haines, Muncy, Pa., who desires to know their name. A sprightly good eating apple in spring, and keeps until July. Marked J. H.

Two smaller red apples, marked W. P. T., and from W. P. Townsend, West-Chester, Pa., who desires to learn their name.

If you deem them worthy of your acceptance, please keep them, and if you can supply names to those needing such handles, you would much oblige yours, J. S. L.

[The apple marked J. H., has much the appearance of Lesher, but is of a widely different character when cut. The others are not known. The other apples are very fine,—Paradise as fine as its closely allied Fallowater. Does the Paradise bear regularly? In our section it has no character in that respect.]

Sporting of a Japan Lily—*Portland, Maine.*—I have a stalk from a Japan Lily that has had sixteen perfect flowers upon it. It came up oval about the breadth of two stalks,

and grew gradually wider like a Cockscomb, and is about an inch and a half wide, and an ⅛ thick, with the blossoms on the sides, edge, and top. It was raised by a florist here, in new soil, on top of a gravel bank, where water is hardly reached short of 60 feet. Is it common for Japan Lilies to show such sporting?

The variety is (Lilium rubrum.)

[All plants are liable to this form of monstrosity, but we have never seen it in the Japan Lily. It must have been a very beautiful sight.]

Evergreen Seeds—*J. B., Battle Creek, Mich.*—You will much oblige a friend by giving directions in the December number. of the *Monthly*, how to plant the following seeds, viz.:

White Pine,	Red Cedar
White Cedar,	Norway Spruce,
English Savin.	

Can the Savin be propagated otherwise than by seed?

[Supposing but a small quantity are to be sown, we should put them in shallow pans of sandy soil at once, and keep them in a cool pit or greenhouse, where is but little fire.

The Savin and all the Cedar tribe are more expeditiously raised from cuttings taken off at this season, and kept through the winter in a cool frame, just safe from frost, than they are from seed.]

Grape Eyes—*G. B, F., Louisville, Ky.*, writes: I wish to start a few vine cuttings, say six or eight hundred,—can I do it in my house with some sort of a case, with water attachment heated by gas? Please give me a few hints on the matter, as I am very anxious to get as many choice vines into the ground as possible, but am obliged from want of means to hurry slow. I have a large laboratory, (I practice dentistry,) in which I could put a propagating case, did I know how to proceed in its construction and preparation of beds, seeds, &c. Is there any work which gives practical reliable information in the art of propagating plants, vines, &c.

[Grape eyes could be struck in a small case, heated by gas, as our correspondent suggests; but as some care would be required in potting and taking care of them afterwards, which would require increased room and facilities, we would not recommend him to raise them this way. He will do better by making cuttings of two eyes in length, and put them in the open ground, cutting them off now, and burying them in the soil up to their upper buds. He will not have half so many plants, but they will be doubly as strong, and afford him more wood for future propagation than eyes will.

There is no work on general propagation.—Lindley's Theory of Horticulture, will give the general principles, which with the back volumes of the *Gardener's Monthly*, for practical and improved hints, is all that we can here recommend to our correspondent.]

Elizabeth Grape.—We have received a bunch of this grape, from a friend, and regret to say, especially as it cost us nearly a dollar in express charges—that it reached us entirely spoiled.—Grapes—nor any fruit, should be sent loose in a box. A piece of soft paper should be put around the bunch, and all *the remaining space* in the box filled with bran meal or similar substance.

Insects—*J. M. F., Dallas City, Illinois.*—Both your specimens are species of White Scale, which often attack pear and apple trees. We should cut away, and burn all the twiggy portions affected, and then scrub the bark of what is left with soap suds, made as warm as you can bear the hand in it. This will entirely destroy them; but you must keep a lookout in future, and eradicate them while they are but few. A life in time saves nine.

Arrangement of a Garden—*J. P. S., Delaware, O.*—Your vegetable and fruit garden, 150 by 75 feet, is very well arranged by a walk through the middle from the house. Five feet wide would be better than four, and we would have box for an edging—stone or brick get thrown out by frost, boards rot and are troublesome, and grass takes too much labor to keep neat. There need be no border formed by anything on each side of the walk, but set your Dwarf Pears 3 feet from the walk. You can pick out no special places for the different vegetable crops, as these will be changed every year. In other points your arrangements are pretty good.

Camassia esculenta—*A correspondent* writes: "I have a lovely native bulb, that seems to have escaped your notice. It is *Camassia esculenta*, grows in the west, particularly Ohio, and has beautiful blue flowers." This is what is now called *Scilla Fraseri*, or Wild Ohio Hyacinth. The roots were formerly eaten by Indians, and is a hardy bulb, well worthy of cultivation.

Spruce Hedges.—"*F. V.* asks "whether" Norway or Hemlock Spruce Fir, would answer for an external hedge, provided it be protected until it is 5 feet high, and 4 feet thick at the base.

[Norway Spruce would. Hemlock would be too weak. Our correspondent notes, in a part of his letter, that in a former communication, he wrote "Friend Editor," instead of Mr. E., as printed. The change was made inadvertently by the printer, and was not noticed by the proof reader.]

APPLES—*From R. F., Baltimore, Md.*—No. 3 appears to be Smokehouse. The green one with ridge running down it, is like an old European kind, known as Kerry Pippin, but we doubt whether that kind is in American gardens. The others we did not know.

BLACK KNOT IN PLUM TREES—*J. B. L.*—Assuming that the knot is of fungoid origin, cutting out the excrescences *before they mature*, will be of vast benefit. Even were the knots to be attributed to insects, the practice should be the same, except you might cut out later, so as to get at and destroy the grub before it escapes. We should *cut out early* —as soon as the knots began to appear.

EVERGREENS—"Was it an oversight on your part not to include the Golden Arborvitæ, in the list asked for by your correspondent from this place? We consider it one of the prettiest we have." *P., Baltimore, Md.*

Undoubtedly it is; but our correspondent asked for *trees*, which the Golden Arborvitæ is not.

NAMES OF PLANTS—*J. M. S., Potosi, Mo.*—Your flower of Corallorhiza, is most probably that plant, but is, as you observe, the largest flower we ever saw. Should be pleased with a perfect specimen of a flower spike another year.

A Subscriber, Westboro' Mass.—1 Coix lachlachryma, sometimes called Job's-tears, 2 Alonsoa linearis, 3 Fuchsia microphylla, which we have not seen for many years, and should be glad again some day to possess.

COMMUNICATIONS of interest, from H. D. Hudiokoper, S. D. Pleasants, J. Frazer, Joseph Auerman, and others, were received too late for the present number

Books, Catalogues, &c.

THE PHANTOM BOUQUET: *A Popular Treatise on the Art of Skeletonizing Leaves and Seed-vessels, and adapting them to Embellish the Home of Taste.* By Edward Parrish, Member of the Academy of Natural Sciences, &c., of Philada. Published by J. B. Lippincott & Co., Philada.

On page 216 of our volume for 1861, we gave a long article on "Skeletonizing," from the *Friend's Intelligencer*. It excited great attention both here and abroad; particularly abroad, where it was transferred from our journal, to English, French and German periodicals, a compliment rarely given to an American article, and one of which the author may be proud. That author was Dr. Parrish, the writer also of the little work before us.

Although Dr. Parrish has done so much to perfect and popularize this elegant art among us, he received the first idea of pursuing the subject from specimens brought from abroad; and indeed the first treatise on the subject was by a Dutch naturalist, Frederick Ruysch, who published an essay on the subject in 1723, all of which is duly recorded by the author.

No prettier present could be made to a lady than the "Phantom Bouquet,"—it would not perhaps be so temporarily charming as a bouquet of rare and living flowers; but it would be a present that would longer live in the memory of the receiver we are sure, and entitle the giver to such lasting remembrance.

CHEMICAL ANALYSIS OF GRAPES, by Dr. C. M. Wetherill.

CIRCULAR *on the Agricultural, Mineral and Manufacturing Condition of the United States.* From the Commissioner of Agriculture.

CATALOGUE OF PLANTS, *For Distribution from the U. S. Propagating Garden, with a Report on the Objects and Aims of the Garden.* By Wm. Saunders, Superintendent.

Since we wrote the notice, in another column, of the start made in this direction, additional signs of life appear by the pamphlets before us.

The first is a novel attempt to test the value of a grape for wine-making, by ascertaining the percentage of necessary wine making elements in the grape. It must strike every one that there are many difficulties in the way of an accurate exposition of facts; and it will lead to great mistakes, if such tables are relied on as facts too hastily. A grape in one climate will ripen *sweet;* in another, the same grape will be *sour;* and the amount of grape sugar found in each specimen analyzed will vary accordingly. Even in the same locality, the same grape will vary in this respect, just as the plant may be healthy, or affected by temporary circumstances. Still there are certain positive characters stamped in each variety, which, when

every circumstance is favorable to perfect development, will always be a "fixed fact," and to which if the chemist could any way approximate, would be of great service. Some, as a rule, will always be sweeter than others. To get at this rule will require grapes from many localities—experiments made on a single bunch, are little more than indexes of what the results might be.

The present experiments are based on single specimens. 24 kinds are named, among which we are sorry to see several foreign kinds, such as Montgomery and Cuepern; because it has been settled that grapes of foreign derivation, are totally unfitted for vineyard culture in our climate. Parties ignorant of these facts, will be induced by noticing the creditable display of "elements" in such grapes, to plant largely of them, and their disappointment rebounds severely on vineyard culture generally.

Another source of regret to us is, that in such scientific documents, proper attention is not given to nomenclature, a very important point. Baldwin Lenoir, we never heard of, and if it is not a mistake, may be correct, and our knowledge be at fault; but to give Catawba as a synonym of the Bland, and Isabella as another name for Schuylkill, will never do. Possibly when the Bureau gets to be in good working order, some system will be found by which the practical man and the man of science may work together, and all such difficulties as these we note, be fully overcome.

In an examination of the table, we find Union Village to be the juiciest of the native grapes. The Herbemont has the greatest percentage of extract of dried juice. In the percentage of grape sugar, the one called Baldwin Lenoir, is a long way ahead, being set down as 20.36, while the next in the scale, Clinton, has but 17.07. In grape sugar the Delaware makes but a poor figure—13.41, not so bad however as Union Village, which is but 7.73.

Mr. Newton's circular is an exposition of what he expects to do, and how those so disposed may aid the objects of the department.

From the circular of the experimental garden, we are sorry to say that of the 70.000 specimens announced for distribution, we can detect but very few that are likely to "develope the resources of the country"—we find Roses and Myrtles, Chinese Arborvitæs and Laburnums; Mist plants, Tea plants, Ginger plants and Oleanders; Cork oaks, Live oaks, other oaks, and so on. This, of course, is not the fault of the present incumbent, who, when he finds how few "apply" for his *prizes*, will probably burn the whole lot, and start entirely *de novo*. His plans for the future, as they are proposed in this circular, "promise well." Though we have little hope of seeing anything worthy of a national reputation arise from this effort; we feel that if any one can do it, the gentleman now in charge will; and we hope the horticultural and agricultural interest will bear with him, while he is combatting the difficulties of the situation.

Catalogues.

B. K. Bliss, Springfield, Mass.—Autumn catalogue of Dutch bulbs.

Edwin Allen, New-Brunswick, N. J. General catalogue, 16 pages.

Bateman, Hanford & Co., Columbus, O. Descriptive list.

Parson's & Co., Flushing, N. Y. set of catalogues.

John Saul, Washington, D. C. Wholesale list.

C. F. Erhard, Ravenswood, L. I., New-York. Fruits.

Asher, Hance & Son, Red Bank, Monmouth Co., N. J. Wholesale.

Pfeiffer & Blackburne, Cincinnati, O. Wholesale.

E. W. Sylvester, Lyons, N. Y. Wholesale.

Annual Register of Rural Affairs.—The number of this useful and unique little annual for 1863, has been issued, and we have been much interested in its perusal. Like its predecessors, it is filled with useful and practical articles on the affairs of the farm, garden and household, and is beautifully illustrated by 150 original engravings, many of them from the pencil of the author of the work, John J. Thomas. Every one should have it.—Published by Luther Tucker & Son, Albany, N. Y.

New and Rare Fruits.

The Pollock Grape, *by Mr. G. Heins, Downingtown, Pa.*—A new grape, which originated with Mr. Pollock, of Tremont, near Morrisania, New-York, was exhibited by me at one of the Horticultural exhibitions, in September. As the proprietor does not wish to propagate or send out for sale this grape, until he has tried it another winter without protection, he has not, as yet, named it.

The vine is one of several seedlings, (by hybridization, I think,) from a native Hungarian vine, The wood is decidedly native, the foliage thick and leathery, perfectly free from mildew. It is a free

grower. The grape is dark purple or black, bunch very compact, without rot, long and large; being very nearly the size of Concord. One of the branches I exhibited, weighed 14 ounces, and was 9 inches long, as weighed and measured by Mr. A. W. Harrison. The grape is without pulp and very vinous, and not too sweet. I have tasted the wine made from it, and although I thought it somewhat lacking bouquet, it is far superior to Catawba, or any other native wine I have tasted. Mr. Pollock, as well as I, thinks it a great wine grape. I, for the sake of the public, favorably hope that it may pass through the ordeal which the owner has prepared for it. I think it far superior to the Adirondac.

Duryea's Russett Pear—A new Long Island seedling, exhibited November 7th, at the Union Horticultural Society's Meeting, by William R. Prince. Size medium or rather large, handsome, pyriform, with a long curved stem, skin ruddy russet, each fruit having a peculiar indenture, not penetrating deeply; flesh buttery, juicy, high flavored, melting at full maturity, excellent; maturity from October 25th to November 10th. It is entirely distinct from any other variety of its season.

New or Rare Plants.

Silene Schafta.—In the collections of herbaceous plants of some of our American nurserymen, we have seen the few past years this lovely little hardy perennial plant, flowering in profusion from June till frost; and, we have had a note to say something public in its favor for some time. The following, however, from Paxton's London Magazine of Botany, is just to the point, and we give it with the single additional remark, that we have found it suit our climate admirably. :

"This simple, but very gay and pretty, herbaceous plant, inhabits rocks on Mount Keridach, in the Russian province of Talysch, and was introduced through Dr. Fisher. from the Botanic Garden, Dorpat, in 1844.

The account is from the 'Journal of the Horticultural Society:' 'This proves to be a beautiful little herbaceous plant, producing a great number of spreading, slender, downy stems, which form compact tufts, and are terminated near the extremity by four or five bright purple flowers, more than an inch long. Of these flowers, that at the extremity of the shoot opens first, and those below it one after the other in succession, so that the branches are by degrees covered all over with blossom. Its stems do not rise above six inches high, and render it well suited for bedding out, or for cultivating among collections of alpines, or for rockwork, over which it will bend gracefully.' The accompanying engraving, representing a well-grown specimen,

fully bears out Dr. Lindley's description, and shows the Silene to be a very elegant plant, and suitable for decorative purposes. It strikes very freely by cuttings, under a hand-glass, and is also increased by seed, which it produces in great abundance; but, being a perennial, the plants do not bloom until the second year. Presuming, however, that you can procure seed, and that it is your wish to grow some specimen plants, sow the seed immediately, and when large enough, put them in 60-sized pots, in light, porous soil, not too rich, putting three plants in each pot. When the plants are established, stop them regularly, so as to make them produce abundance of shoots, and when they have formed a compact tuft, remove them into 48 or small 32-sized pots, using the same compost as before. Keep them through the winter in a cold frame; but about March, pot them into pots of a suitable size, using loam and leaf mould in about equal proportions, and making it tolerably firm in the pots. After this potting, it will be well to give the plants the protection of a frame; to keep a moist atmosphere, and to encourage the plants to grow as fast, but as as robustly, as possible; stop the shoots regularly, and support those in the centre with a few neat stakes, but allow the side branches to droop gracefully round the sides of the pot. Towards June they will begin to blossom, and at that time they may be removed to the vases,

and be planted out, and afterwards be regularly supplied with weak manure water. Take care that the plants do not suffer for the want of water, and to prolong the season of blooming as much as pos-

sible, remove the seed-pods, which are produced in great abundance as fast as they appear. After blooming, the plants must be cut in pretty close, and started afresh, or be thown away to make room for other plants.

Foreign Intelligence.

Pelargoniums.—Large plants for early bloom may receive their final shift at once; use good turfy loam, well decomposed manure, and a little sand, thoroughly mixed together, but not sifted; give plenty of drainage; do not fill the pots too full nor press the soil too hard, so that the water may pass through the base freely; water sparingly at first after sifting; increase the supply as the plants advance in growth; re-pot newly-struck cuttings; stop any that have a tendency to be long-jointed; the fancy varieties should be encouraged to make good growths by being kept a little warmer; in re-potting use soil a little lighter than for the larger sorts; give air freely in favorable weather.

Lilium auratum. We recently recorded the first flowering of Lilium auratum by Spooner and Parkman of Jamaica Plains, Mass. Our foreign friends are no less pleased with the new "acquisition" than we are, as the following from a British journal shows:—

"Every year sees a great number of new and beautiful plants introduced into our gardens, but each season there is one plant which stands forth pre-eminently as the plant of the year, as we have before observed. Each year is marked in the memory of the gardener as the date when a "sensation" plant (if I may so term it) was first imported. What is the plant which we shall in future connect with the year 1862? I give my vote for Lilium auratum; and if any one has got a plant to start in opposition to it, all I can say is summed up in the phrase used by Johnny Gilpin; 'May I be there to see it.' Our Japan Lilies have for years been favorite and useful plants; and here is another one added to their corps, which will aid much in keeping up their high character. Some people would say it eclipses all the kinds we have already in cultivation, but I do not like the phrase; it looks like ingratitude to the plants which have served us faithfully through many a long year."

The Grape Vine at Hampton Court.—As you are somewhat interested in grape culture, you may like a description of an old vine I saw yesterday, at Hampton Court, 12 miles from London, (that is if you never have had one.) It is a Black Hamburg, 96 years old. The grape-house in which it is trained, and which it completely fills, is 72 feet long, and 30 feet wide. The vine comes into it at one corner near the ground, and is there 36 inches in circumference. The length of the main branch is over 110 feet. There is one other leading branch, and from these two, stems lead out straight either way, spreading over a space of 2200 square feet, and hanging full of half-grown fruit. Last year it bore 900 pounds, not all cut until the 10th of February. The fruit goes to the Royal family of England.

The floor of the vinery is of stone, and one-third of the width is covered with excavations, 5 or 6 inches square, and an inch deep, about a yard apart, filled with sulphur to prevent mildew. The keeper told us the direct rays of the sun upon it made it effectual. I have seen sulphur used, but not in this manner. He was asked why the house was not enlarged, and replied, "They thought it best not to let the vine bear more than it would hold."—J. Murray, in *Rural New-Yorker*.

Sale of Orchids.—The following, from the *London Cottage Gardener*, will give some idea of the high prices paid for plants in England:

A highly important sale of Orchids, took place at Mr. Stephens' rooms, King street, Covent Garden, on Thursday and Friday, the 18th and 19th inst., when the first portion of the extensive and valuable collection, belonging to G. Reed, Esq., of

Burnham, Somersetshire, who, it seems, is giving up the culture of this class of plants, was brought to the hammer. Among plants he sold were some remarkably fine specimens, which brought high prices, and the total proceeds of the two days' sale amounted to upwards of £1030. The following are a few of the prices which were obtained: Cypripedium villosum, a very fine plant, stated to be the largest in the country, was knocked down after a spirited competition, to Mr. Veitch, of Chelsea, for £75. Odontoglossum nævium, was bought for £32, by Mr. Williams, of Holloway, who also obtained a fine specimen of Epidendrum prismatocarpum, for £15; Ærides quinquevulnerum, the white variety, £12; Ærides Schrœderi, £15; Vanda gigantea, £15 10s.; V. cristata, £10 10s.; Uropedium Lindenii, £13 10s.; and some others of less value. Mr. Veitch, in addition to the plant first named, was also the buyer of a large Lælia purpurata, which brought £19; Vanda Cathearti, £21; a new Cypripedium, £10 10s., &c.

Rules for Window Plants.—*From the German.*—Watering. Practice tells the eye whether or not required. The collar of the plant shows it.—Better still knock at the pot. If it sounds hollow, water, if it gives a muffled sound, don't.

Watering when not required sours the earth and the fibers of the root will rot. To correct sourness pour hot water—40° or 50° Reamur—if that won't do, repot.

Worse than to often watering is to seldom watering. Once neglected water little and often till normal health is restored.

In warm days, the surface may appear moist and the root may be dry, plunge in water.

Water in the morning in preference, with rain or river water.

Let the water be of equal temperature with the air, the plant should be kept from gas, keep the soil loose.

Zizania aquatica.—European Horticultural journals discuss the *Zizania aquatica*. The wild rice of this continent, found all the way from from Canada to the Gulf. The grain is said to contain 78 parts of amylaceous, and 5 of albuminous matter. The green stalks also are of excellent use for fodder. The French *Institut Central d' Acclimatation*—an institute like our Washington Experimental Garden, only with the difference of practical utility in its favor—did not succeed with it, while the *Prussian Acclimatations Gesellschaft* did. All our gunners who go after *Reed* birds, know the Zizania, the favorite and nearly sole food of these birds.

Pot Roses.—*Bengal*—The following seven are the best of this showy class of roses for pots. Archduke Charles, rosy crimson; Cramoisie Supêrieure, velvety crimson, the showiest of all bedding roses; Eugene Beauharnais, amaranth; Madame Breon, rich rose; Marjolin du Luxembourg, dark crimson; Mrs. Bosanquet, flesh; President d' Olbecque, cherry red.

Australian "Nardoo."—That disastrous expedition through the whole length of Australia, from south to the north, which has cost the life of M. Burke and his companions, has brought to light a singular plant. The only survivor, M. King, has lived for a long time on what he calls *Nardoo*, a plant of which the natives make a sort of flour, by grinding it under stones. It comes from a fern, called Myrsilla by botanists, and, if it were worth while, could be easily transplanted to Europe or America. It might be worth while for our Agricultural Department to look out for it.

A Selecton of Good Old Annuals.—*Limnanthes Douglasi*—Flowers white, with centre ring of yellow; May.

Schizopetalon Walkeri—Flowers white; June.

Clintonia pulchella—Flowers tri-color—blue, white and yellow; June, July and August.

Dracocephalum canescens—Salvia-like flowers, being in color an indistinct rose; July and August.

Datura ceratocaulon—Flowers white, striped with purple; July and August.

Schizanthus retusus—Flowers orange and scarlet; June to October.

Calandrina discolor—Beautiful rose and purple flowers; July to September.

Calandrina speciosa—Flowers bright crimson; June and July.

Nigella hispanica—Flowers of a pleasing blue; June to August.

Cleome speciosissima—Light red flowers; June and August.—*Cottage Gardener.*

Packing Cut Flowers for Travelling.—First, a box is made of half-inch deal, the length, breadth, and depth of which may be according to the size of the bunches of flowers. Then take two cords along the box longitudinally, 1 inch apart and 2 inches from the bottom. After which take other two lines of cord transversely, and at right angles to the first two lines put in, 1 inch apart and 6 inches above the other lines, just according to the length of stalk of the bunch. Nothing more is

done but tying two ligatures round each of the rows of cording. This done, prepare your bunch by tying some damp moss round the footstalks of your bouquet, insert down through the cross lines of cord, and run the small ties previously made close to the bunch, which makes it quite secure from moving in any direction.

By this means you have a simple, economical and effective mode of trasmitting flowers to any distance, and preserving them as fresh as when cut.—*London Cottage Gardener.*

Horticultural Notices.

AMERICAN POMOLOGICAL SOCIETY.

The undersigned, President of the American Pomological Society, congratulates the cultivators of fruit, and the public generally, upon the gratifying progress which the science of Pomology has made in our country. This advance is mainly to be attributed to the establishment and influence of Horticultural, and Pomological Societies. Prominent among these is the American Pomological Society, embracing, as it does, within its organization, all the States and Territories of the Union, the Canadas, and the Eastern British Provinces. This Association held its ninth session, in the city of Boston, during the last month. The attendance was large, embracing nearly two hundred delegates and members, and in which fourteen States and Territories were represented. The contributions of fruit were numerous, and the discussions of a highly interesting character. These, like the former proceedings, are to be published in the Volumes of the society, and in which will also appear the New Catalogue of Fruits, together with a list of the various States and districts to which they are best adapted.

All persons who are desirous of obtaining these transactions, are respectfully solicited to become members of the Society, by forwarding to Thomas P. James, Esq., Treasurer, Philadelphia, or to the undersigned, at Boston, the requisite fees. Ten dollars constitutes a life, and two dollars a biennial membership. Life members will be furnished, as far as possible, with the back volumes of the Society's Publications.

Persons desirous of responding to this circular, will please do so immediately, that their names may appear in the forthcoming volume.

MARSHALL P. WILDER, President.

Boston, Mass., Oct. 25th, 1852.

PENNSYLVANIA HORT. SOCIETY.

DISCUSSIONAL MEETING, NOVEMBER 4.

T. P. James in the Chair.

Mr. Charles H. Miller, presented an Essay on Storing Fruits and Vegetables for winter.

Mr. Miller, in reply to various questions, stated that the fruit houses in Kent, England, were usually of brick or stone, with double walls, and air space between. Many of the London fruit merchants have extensive orchards in the country, and generally ripen the fruit at their shops in the city. Some orchardists, who are also hop growers, use their hop houses for the purpose; they are large substantial stone buildings, well suited to that use. They are well-ventilated, the ventilators being closed in frosty weather. Fruit houses are often built on the north side of lean-to vineries, having a southern exposure. No artificial heat is used to keep out frost.

Mr. Harrison stated that Rhode Island Greening apples, packed in kiln dried sand, and placed in a cool, dark, dry cellar, had been kept for one year, and then ripened as well as if gathered the same season. Ripe W. Doyenné pears, dipped in thick cream of lime and packed in sand, had been preserved till April. He regarded sand, kiln dried, as the best material for keeping grapes. Sawdust, especially of pine, gave a terebinthine flavor to fruits. Charcoal, bran and sawdust, being active absorbents, were objectionable.

Dr. Burgin explained the chemical principles of decay; oxygen is the great destructive agent of the universe, and exposure of fruit to the air hastens its decay.

Mr. Baxter spreads his pears on the floor of the attic, over his kitchen stems uppermost, not touching each other, and covers them with newspapers. A few rot, but none shrivel. Has entire success. Would now spread linen cloth both under and over them.

Mr. Mitchell stated that Mr. E. M. Davis' plan of keeping apples, was to spread quick lime on the floor under the open shelves. Had bunches of the Chasselas de Fontainbleau grape, now hanging on the vines under glass, two months since ripe. Low temperatures retard the ripening process; if too low check it entirely, or the fruit ripens without flavor. Had placed some pears in the ice-house, which never ripened. A very important matter is to *grow* the fruit well; half grown pears never ripen well. If well-grown, of good *size, shape*, and *color*, they will ripen up of the highest flavor.

Mr. Miller had occasion in 1853, to move a row of Duchesse pear trees while in fruit; some of the

pears fell and were accidentally covered with earth. In January, he found them sound and good.—Grapes should be hung in a dark room; some persons cut the bunches with a portion of wood attached, and thrust the ends into a potato or turnip. The Barbarossa grape, packed in bran had been kept till June. Thick-skinned grapes hang longer on the vines, and keep longer than thin-skinned ones.

Mr. Harrison said low temperature favors the maturing and ripening process. After the fruit is plucked, an organic change goes on by which the saccharine-juices are elaborated. The *ripening* process is the first stage of decay. Had experimented on the Vicar, to ripen it in a warm room; the fruit was dry and tasteless; the same with Glout Morceau. Was satisfied that winter pears would all ripen better at a low temperature. Mr. Barry had stated that he packed Vicars in barrels, kept them in an open shed until frost, then spread them on the attic floor of a barn, and covered with leaves; when severe cold weather sets in, he again packed them in barrels, and stored them in a cool, dark, dry cellar, to ripen.

Dr. James described the method followed by Mr. A. L. Vansant, a celebrated fruit dealer of this city. He has a cool, dry cellar under his store, where the fruit is arranged on shelves or trays, generally in single layers.

Dr. Burgin stated that sugar is generated in the fruit by fermentative action. If kept too cold the fruit could not ripen, for its vitality is destroyed. It is said the effects of frost may often be eradicated by putting the article frozen into the earth. Potatoes are often saved in this way. Water, also, abstracted frost.

Mr. Kilvington said that the Malaga grapes, formerly so plentiful in our market, were packed in cork dust. A friend of his had sent grapes thus packed to St. Louis, in excellent condition; he had tried sawdust, charcoal, sand, &c., but found them all inferior to cork dust.

Dr. Burgin spoke of a method of keeping sweet potatoes, practised in New-Jersey, some years since; they were piled up in a closet, near a chimney, in layers, with refuse flax or swingled tow, as it is called. They were remarkably fine and fresh. In his youth, apples were commonly packed in linen sheeting; cotton did not answer so well.

Mr. Satterthwait found sweet potatoes to keep well, if carefully handled, so as to prevent bruising, and placed on the floor with only sufficient heat in the room to keep out frost. Does not find any advantage in packing apples or pears with layers of straw. Straw sometimes gives a flavor to fruit packed in it. Pears, to keep and ripen well, must be well grown; keep them at a low and uniform temperature, say 40° to 50°, and not exposed to a draft of air, and in the dark. Fall pears ripen well and color beautifully if packed in hay. Thinks the hay contributes to their fine color.

Mr. Miller. The ripening of pears may be hastened by hanging them up in a flannel or linen bag, in a warm room; but they rot as soon as ripe. Has not perceived any difference in flavor, ripened in a warm or a cold room.

Mr. Eadie. Sweet potatoes are easily kept in a cool room. Straw should never be put in contact with them. It gives them a bad taste. Earth should be put on the potatoes, and straw over the earth.—The chair appointed Mr. Saunders to prepare the Essay on "Heating Glass Structures," for the meeting in December.

STATED BUSINESS MEETING, NOVEMBER 18.

Awards of Premiums.—Table Design and Hanging Basket, to William Southwood; Basket cut Flowers, to William Joyce, gr. to M. W. Baldwin; Bouquets, pair, to R. Kilvington; Chrysanthemums, 6 plants, dwarf and specimen plants, all to James Eadie, gr. to Dr. Rush; Lycopodiums and Sonerila, in bloom, two special premiums to C. H. Miller, gr. to D. R. King; Pears, 12 varieties, to J. McLaughlin, gr. to I. B. Baxter; Pears, 6 varieties, to A. Graham, gr. to Gen. Patterson; Apples, 12 varieties, to S. W. Noble.—On motion of F. Rogers, Esq., a Committee consisting of Messrs. Rogers, Mitchell and Harrison, was appointed to report on the expediency of a Fall Exhibition. An amendment to By-Laws, for appointing committees in January instead of February, was presented and laid over under the rule till next meeting. Mr. Philip Syng, gr. to Dr. William Camac, was elected a member.—An interesting communication, from Mr. C. B. Miller, Secretary of the Brooklyn Horticultural Society, containing suggestions for the management of Horticultural Societies, was read and listened to with marked attention.

ANNUAL MEETING.

Officers elected:

President, J. E. Mitchell.
Vice " J. Dundas, M. W. Baldwin,
" " Caleb Cope, Fairman Rogers.
Cor. Sec'y, W. Saunders.
Rec. Sec'ry. A. W. Harrison.
Treasurer, H. A. Dreer.
Prof. of Botany. T. P. James.
" " *Hort'l Chemistry*, Prof. J. C. Booth.
" " *Entomology*, S. S. Rathvon.

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