Title: The Gardener's monthly and horticultural advertiser, v. 7

Place of Publication: Philadelphia

Copyright Date: 1865

Master Negative Storage Number: MNS# PSt SNPaAg112.3

Volume: 7, 1865

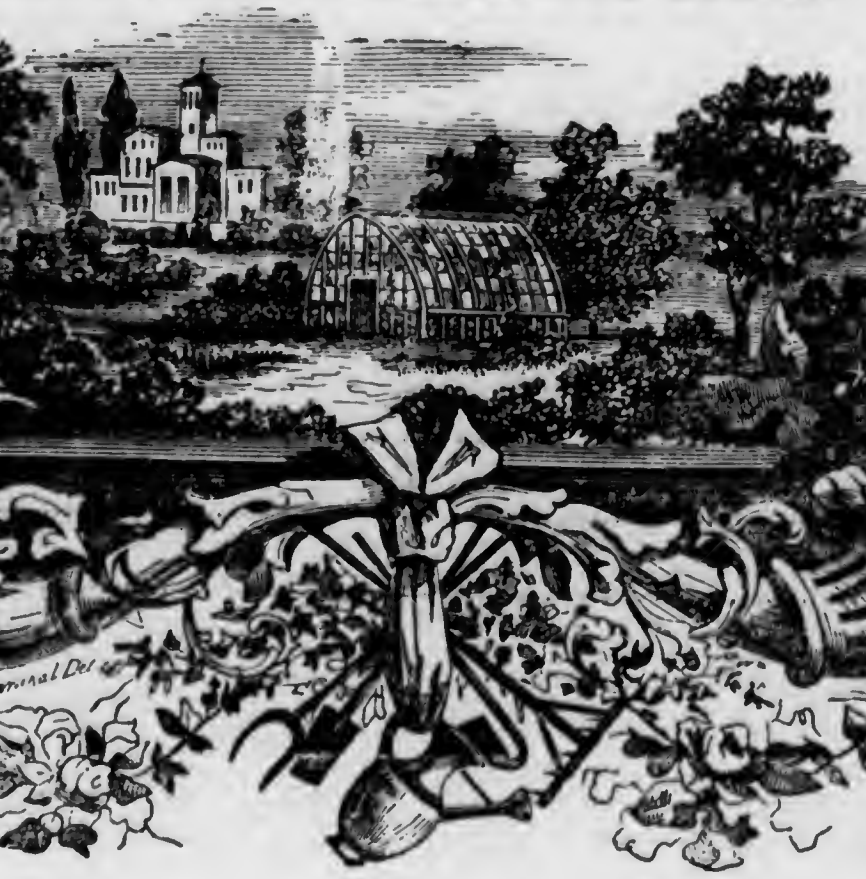
THE GARDENERS MONTHLY And Horticultural Advertiser

EDITED BY THOMAS MEEHAN.

VOLUME VII.—1865.

PUBLISHED BY W. G. P. BRINCKLOE,
No. 23 North Sixth St., Philadelphia.
New York: Geo. E. & F. W. Woodward.

TERMS:—TWO DOLLARS PER ANNUM.



ILLUSTRATIONS.

THE GARDENER'S MONTHLY.

DEVOTED TO

Horticulture, Arboriculture, Botany & Rural Affairs.

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

JANUARY, 1865. VOL. VII.—NO. 1

Hints for January.

FLOWER-GARDEN AND PLEASURE-GROUND.

Hyacinths, or other hardy bulbous roots that may not have yet been planted, may still be put in where the ground continues open. The beds of all such bulbs should be slightly protected with manure or litter, and be carefully watched for mice and vermin, which are likely to avail themselves of the shelter and feed on the roots.

Evergreens set out last fall in windy or exposed situations, will be benefited by a shelter of cedar branches, corn-stalks, or mats, set against them.—Whether hardy or tender, all will be benefited thereby.

Lawns that are impoverished by several seasons' mowings, will be improved by a good top-dressing. This may be applied at any time after the leaves are gathered up, and before the snow falls. Soot, wood-ashes, guano, or any prepared manure, is best for this purpose. Barnyard manure is objectionable as generally containing many seeds of weeds.

Flowers for bedding should be pretty much decided on now, as to what are to be principally planted, and how arranged, as the plants can in many cases, be propagated through the winter. It is found here that stove-plants, on the average, make better bedding plants than the greenhouse plants usually employed in England. *Amaranthus tricolor* makes a very pretty edging, and *Coleus Verschaffeltii* is far better than the well-known Perilla Nankinensis. Bouvardia leiantha pegged down is said to make a pretty bed, but we have not seen it. The Cannas are coming into extensive use,—a bed we saw at Ellwanger & Barry's last year, was particularly grand in its effect. The best blooming kinds are Canna Warcewiczii, C. rubra, and C. indica,—but one of the finest for its foliage, C. discolor, does not bloom before the frost comes. Among the best bedding plants are the Scarlet or Horse-shoe Geraniums. There are now so many tints, and shades of color, from white to salmon and scarlet, that they might form interesting gardens in themselves,—just as roses do.

Wherever any part of a tree does not grow freely, pruning of such weak growth, at this season, will induce it to push more freely next year. All scars made by pruning off large branches, should be painted or tarred over, to keep out the rain. Many fruit trees become hollow or fall into premature decay from the rain penetrating through old saw cuts made in pruning. Also the branches should be cut close to the trunk, so that no dead stumps shall be produced on the tree, and the bark will readily grow over. Many persons cut off branches of trees in midsummer, in order that the returning sap may speedily clothe the wound with new bark, but the loss of much foliage in summer injures the tree, and besides, painting the scar removes all danger of rotting at the wound.

Some judgment is required in pruning flowering shrubs, roses, etc., although it is usual to act as if it were one of the most common-place operations. One of the most clumsy of the hands is commonly set with a shears, and he 'goes through' the whole place, clipping off everything indiscriminately. Distinction should be made between those flowering shrubs that make a vigorous growth, and those which grow weakly; and between those which flower on the old wood of last year, and those which flower on the new growth of next season, as the effect of pruning is to force a strong and vigorous growth. Those specimens that already grow too strong to flower well, should be only lightly pruned; and, in the same individual, the weakest shoots should be cut in more severely than the stronger ones. Some things like the Mock Oranges, Lilacs, and others, flower on the wood of last year—to

prune these much now, therefore, destroys the flowering; while such as Altheas, which flower on the young wood, cannot be too severely cut in, looking to that operation alone. We give below a full list of the shrubs in most common cultivation, of the different classes.

Ornamental shrubs that flower chiefly from the wood of the preceding year: Snowy Mespilus, Dwarf Almond, the different kinds of Andromedas, Azaleas, Kalmias, Rhododendrons, Calycanthus, Corchorus, Cornelian Cherry, and the other Dogwoods; Philadelphuses, Deutzias, Mezereon, Leatherwood, Fothergilla, Golden Bell, Hydrangeas, Itea Virginica, Jasmines, Privet, Upright Fly and Tartarian Honeysuckles, Pyrus japonica; the Missouri and other ornamental Currants; most of the early flowering Spiræas, Dwarf Pavias, Snow Berries, Guelder Rose, Wiegelia rosea, Persian and other Lilacs, Annual Roses.

Shrubs that flower from the present season's growth: Amorpha fruticosa, Ceanothus Americana, Bladder Senna, Coronillas, Burning Bushes, Genistas, Scotch Broom, Althæa, Hypericums, such as Kalmianum, prolificum, etc.; Green-fringe, Flowering Locusts, the Fall-flowering Spiræas, Tamarix, Vitex agniscastus, &c.

These lists also embrace the most desirable of ornamental shrubs in cultivation, from which the amateur may select when the planting season arrives.

In pruning roses, the Fall-blooming kinds, which flower on the new growth, may be pruned as severely as we wish,—in fact, the 'harder' they are cut in the better. In this class are the Noisette, Bourbon, Tea, China, and Hybrid Perpetual, and Perpetual Moss. Without considerable experience. it is difficult for the amateur to distinguish these classes; the best way to get over the difficulty is to obtain the catalogues of the principal rose-growers, in which each kind is usually classified. Amateurs should pay more attention to the scientific, if we may so term it, study of the rose, and its classification and general management; no class of flowers is more easily understood, and no one affords so rich a fund of perpetual interest.

The manure heap is one of those items that can receive attention at this season to advantage. Without a good pile of rich compost, very little success can be hoped for in any kind of gardening affairs. Leaves and litter of every description should be collected whenever possible, and stored in suitable places, where they will not be offensive by their littery appearance. For flowers, generally leaf mould from the woods is very acceptable; not the half rotted leaves that are immediately on the surface, but such as has been powdered by age, and amongst which the roots of the trees have already penetrated, and rendered of a spongy consistence. We like all manures to be thoroughly decomposed before using, if the garden soil is already light and to this purpose the manure heap should be occasionally turned over and lightened to assist fermentation. This also is aided by watering the heap with a solution of potash, and which also gives additional value to the manure.

HOT AND GREENHOUSE.

Temperature at this season about 55° or 65° for the Hothouse. It is better, however, not to keep so high a temperature than to have to give much side air, to either this or the Greenhouse. What benefit is gained by such free admission of air, is more than lost by the sudden escape of so large a quantity of moist air, as that course of practice entails. Confined air in glass houses is full of moisture, and few persons have any idea how very different it is in this respect after a sudden draught of side air has been admitted through. These sudden changes from moist to dry in the condition of the atmosphere of plant-houses, is one of the chief causes of mildew and many other plant diseases. Every one has noticed how well plants often seem to thrive in the green slimy pots in the houses of some slovenly or short-funded nurseryman, and go away mostly with the conviction that plants do best in dirty pots. But it is the moist atmosphere—regularly and unchangeably moist—which favors the slime, that the plants desire, and all this may be obtained without a total neglect of cleanliness. Top air may be freely given in the hothouse with great benefit, as the plants are now beginning to grow vigorously, and flower freely.

In the Greenhouse, air may be given in fine weather; but if the temperature is not allowed to go much above 45°, much will not be required. The stereotyped advice to give air freely on all occasions when not actually freezing, is about on a par with the absurd practice that lays the foundation of consumption in a child, by turning it out almost naked in frosty weather to render it hardy.

Many strike their *Fuchsias* now, from which they desire to make very fine specimen plants. All kinds of plants that are required for spring or summer blooming should be propagated whenever the time permits.

All growing plants, as Calceolarias, Cinerarias, Chinese Primrose, Geraniums, and so on, should

be potted as often as the pots become filled with roots. Plants which have a growing season, and one of rest, as Rhododendrons, Azaleas, Camellias, etc., should be potted if they require it, just before they commence to grow, which is usually about the end of this month. In potting, a well drained pot is of great importance. The pots should be near one-fourth filled with old potsherds, broken small, and moss placed over to keep out the soil.

In many greenhouses, we have noted lately more attempts at a tasteful arrangement of the plants, than used formerly to prevail, when the only object of a greenhouse seemed to be a mere store-place for border flowers during winter. This is very commendable, and might be much more improved on. Every few weeks the plants may be reset, and the houses made to appear quite different. In the end where the lowest plants once were set, now the taller ones may be placed; here a convex group, and there presenting a concave appearance. Drooping plants on elevated shelves, and hanging baskets from the roof, make little paradises of variety in what was once unbearable monotony. Gardeners often wish to know the secret of maintaining a continued interest on the part of their employers, in their handiwork, and this is one of the most potent: continued change and variety in the appearance of every thing. Beautiful flowers, graceful forms, elegant combinations, all developing themselves with a healthy luxuriousness, and everchanging endlessness, will wake up an interest in the most indifferent breast.

Many plants will seem to be full of roots, and the temptation to repot will be very great; but if a plant is desired to flower freely, the fuller of roots the pot is the better. Continual pot-*tering* is the bane of plant culture. If the soil is so very much exhausted that the flowers are likely to be small and poor, a half inch of the old soil in the pot, on the surface, may be replaced by a top dressing of rich compost. But watchfulness must be be afterwards exercised, or the plant will get over dry, as the loose soil on the top will often appear wet, when in reality all below is dry as a powder horn.

This, by the way, is often the cause of the flower buds of Camellias falling off. The little dribblings of the water pot they daily receive, do not penetrate far beneath the surface; the roots at the bottom do not get enough, and the buds drop. Camellias ought to be in such a part of the house as not to be liable to become often dry; such a pot for instance as will admit of one good thorough watering being enough to last for a week.

WINDOW PLANTS.

These suffer much at this season from the high and dry temperatures at which it is necessary, for human comfort, to keep our dwellings. Air can seldom be admitted, from the lowness of the external temperature. Saucers of water under the plants do much to remedy the aridity from which room plants suffer. In such cases, however, so much water must not be given to the plants as to those without saucers. The water is drawn up into the soil by attraction, and though the surface will appear dry, they will be wet enough just beneath. The more freely a plant is growing, the more water it will require; and the more it grows, the more sun and light it will need. In all cases, those which seem to grow the fastest should be placed nearest the light. The best aspect for room plants is the south-east. They seem like animals in their affection for the morning sun. The first morning ray is worth a dozen in the evening. Should any of our fair readers find their plants, by some unlucky miscalculation, frozen in the morning, do not remove them at once to a warm place, but dip them in cold water, and set them in a dark spot, where they will barely escape freezing; sun light will only help the frost's destructive powers.

FORCING.

Grapes started for the earliest crop, will now be starting into leaf, when the temperature may be raised to 60° or 65°. Those trained permanently to rafters will require a slightly different mode of treatment from those raised in pots. In pot-vines the object is to get all the fruit possible from the vine; on the permanent vines we have also to look to the preparing of the plant fer the next year's crop. A vine that has been properly managed, should have the bearing shoots at the bottom of the cane produce nearly as fine bunches as those at the top. If the vine pushes strongly at the top, and weakly below, very little top growth should be allowed, and as much as possible below,—the more leaves and shoots allowed at the lower parts of a cane, the stronger it will eventually become. Every care should be taken to preserve the health of the leaves—on that much of success depends. The syringe should be often used: it discourages insects, and promotes cleanliness; and care should be had that no gas escapes from the flues. Red spider is likely to prove a formidable enemy, and should be well watched. Thrip does not often prove trouble some in early houses, but when it does is easily destroyed by three successive light doses of tobacco-

smoke. As the grapes show flower, they may be stopped two or three buds above the bunch. Those on the rafters may be thinned according to the strength of the vine. Too great a crop often injures the prospects of the next season. In pot vines every bunch may be left on that the plant is capable of bringing to perfection, as the future injury of the vine is of no great consequence. As pot vines grow, they should be treated liberally to manure water. Well decayed cow-dung, steeped in rain water, makes the best liquid for the grape vine. It is not customary to let any shoots grow from pot vines, but those bearing fruit,—the whole energy of the plant is driven into the fruit, though, as before observed, every care should be taken to preserve the *main* leaves. The leaves from the laterals are of very little value.

Where Lettuce is grown with a slight heat, care must be taken to give it plenty of light, or it will 'draw,' as gardeners term it, and be nearly worthless. The rule with all forced things is, that the warmer they are kept the more light they should receive. Radishes, as well as Lettuce and Cauliflower, must not have a higher temperature than 55° at this season,—too much heat makes them run to seed in these dark days.

Communications.

MR. PULLEN'S ORCHARD-HOUSES.

BY JAS. WEED, MUSCATINE, IOWA.

Your readers are already aware that we advocate the use of heavy non-conducting shutters, as a substitute for 'simple glass-roofed sheds,' originally designated Orchard-houses, for growing the Peach, Apricot, and other tender and delicious fruits which do not require greater heat to ripen in perfection than is afforded by our American summer sun, and that we also believe their employment in covering glass structures for forcing these fruits, will much simplify the process of forcing and greatly diminish the cost of their production.

Some of the data in the description of Mr. Pullen's experience last winter, in the *Monthly* for August, are worthy of note. The fact that "on some of the trees the buds were all killed," on the 30th of December, even in New Jersey, verifies the assertion, long since published by an eminent Pomologist, that a simple glass covering, without fire heat, does not afford a sufficient protection against the extremes of cold liable to occur in our climate. It is to be regretted that the degree of temperature which destroyed them in the house was not given, as it was probably somewhat higher than in the open air, where, we understand, peach buds were not injured, and a large crop has been realized. If we are correct in the supposition, we infer that buds in the house were not well ripened, or had been too much excited by too much heat under the glazed covering, resulting in their destruction at a higher temperature than they bore with impunity out of doors.

Night temperature 52° ranging to 36° and on the 11th of February, nearly six weeks after forcing commenced, it fell 32° with an outside temperature of 8° but without apparent injury. Had the outside temperature fallen a few degrees lower, or had there been greater carelessness or less judgment in firing, the entire crop, with the cost of six weeks forcing would probably have been lost. Certainly it would seem that such a covering for houses appropriated to forcing fruits, as would enable us to adopt a night temperature of say 40° without the slightest danger of reaching 32°, would secure important advantages.

Would not the Apricot, which the confectioners call for "as eagerly as peaches," thus better "bear the confined air of a heated house early in the season?"

"Air was given as early and freely as possible in the day time, but it was not till the 7th of May that the ventilators were left open at night. The artificial heat at night was continued till the 24th of April, consuming in the furnace *eleven tons* of coal, but heating with the same hot-water pipes a small grapery.

The heat during the day, even early in the season, was often intense in the full sunlight; and in the month of May, the leaves being evidently burnt, the glass was painted with a coat of lime wash, which had a good effect. * * *

As soon as the fruit begins to color, or shows symptoms of coloring, Mr. Pullen removes the pots or boxes to the open air, plunging and mulching the pots as before. He thinks early maturity, high color, and good flavor cannot so successfully be obtained under glass,"

How does he obtain *early maturity*, *high color* and *good flavor*, by removing the pots to the open air, when the first peach ripened and fell from the tree on the 8th of May, the second the 3d of June, and the ventilators, even, not left open at night till the 7th of May. We should suppose that even later varieties would show symptoms of coloring by this time, and require removal to open quarters; but it seems that in the month of May, while it was still necessary to retain the trees in the house, the glass had to be whitewashed to prevent burning by sun heat. With movable sash and shutters, it is easy to see that ventilation to any extent required, even to full exposure, could have been had any time, even before the ventilators could be safely left open at night; the sash could have been dispensed with altogether, and the shutters used to afford all the protection desirable, thus securing all the advantages of exposure to natural climate, even to the early varieties, without the necessity of removing the later ones to an outside location.

If by the use of shutters, two of the eleven tons of coal could have been saved, estimating the same at $12 per ton, the saving would equal simple interest on $400,—and, with such shutters as we propose, we believe from three to five tons could easily have been economized, besides greatly simplifying and diminishing the labor and care in the general management.

DESTRUCTION OF INSECTS IN PLANT HOUSES.

BY E. R. HIBBERT, GARD. TO FAIRMAN ROGERS, ESQ.

Read before Pennsylvania Hort. Society, Oct. 4,'64.

Green flies, or what are known as green lice, infest plants of a free-growing nature. They attack the young shoots, leaving a black, dirty appearance on the foliage. Many remedies for their destruction have been offered to the public; but the best methods of destroying them that I have found, are fumigating with tobacco or syringing with whale-oil soap: one pound of soap in a bucket of water.

Fumigating should be done in clear dry weather, when there is no wind. It has been recommended to syringe the plants with water before fumigating; but I have found that the dryer the foliage is the less danger there is of burning it with the smoke.

Some writers recommend that such plants as heliotropiums, lantanas, salvias, and plants with soft downy foliage, should be put under the stage before smoking; but I do not find the smoke to do such plants any harm, if care is taken not to let the tobacco blaze. I always set down all kinds of ferns: some of them stand the smoke, but I do not trust any that I can lift down.

Syringing with whale-oil soap cannot be done in a greenhouse where there is not much fire, for it would be too long drying, and would cause the foliage to damp off.

Red spiders are the result of a dry atmosphere, and they will destroy the foliage of the plants before they are seen. As soon as you see the foliage of the plants yellow-spotted, you may expect to find Red spiders; turn up the leaves, and you will see them running about with great swiftness. They are of a blood color, and when very numerous they work thick webs over the whole plant, forming a mass of half dead stems, decayed leaves, and tens of thousands of spiders.

The most effectual remedy that I have found, is thorough syringing with whale-oil soap, one quarter of a pound of soap to a bucket of water. The best way is not to let them come at all, by syringing three times a week in winter, and every day in summer profusely, under the foliage, then they will not trouble you. The fumes of sulphur cause their instant death, but should not be used without great care and experience.

The Mealy bug is another great pest in the hothouse and greenhouse, and if not instantly destroyed it increases rapidly. It is of a white mealy color, and when bruised of a brownish red, generally covered with down, under which it deposits its eggs, and the young come forth in a short time in great numbers. Fumigating has no effect upon these insects. The following mixture is death to them: Take two pounds of whale-oil soap, two pounds of flower sulphur, two pounds of leaf tobacco, three ounces of strychnine, one table-spoonful of oil of turpentine. Boil these in four gallons of water, down to three gallons, stirring well until it is done. When it is cool, dip the whole plant into the liquor, drawing it to and fro gently, until every part of the plant is entirely wet with the mixture; lay the plant down on its side until half dry, then syringe it well with clear water, and set it back in its place. This insect will feed upon cactus, gardenias, ferns, lemon trees, justicias, fuchsias, begonias, thunbergias, passifloras, hoyas, euphorbias, or almost any plant that is in its way.

Small white scaly insects, which generally infest oleas, tea plants, oleanders, acacias, epacrises, and many other plants, may be destroyed by using a wash made very strong, of whale-oil soap and turpentine: half a pound of soap and two table-spoonfuls of turpentine, in one gallon of boiling water, or with a wash of weak vinegar and water of the same heat.

There is another species of Scale bug, larger than the white scale insect, very like a turtle, which infests ferns, and many other plants. The two last washes will destroy it.

Thrip is the worst of all insects, for it infests almost every plant known. It is a small black insect when full grown; when young, of a yellowish white color. When touched, they skip like a grasshop-

per. Many remedies for their destruction have been offered to the public. I have tried them all, and have found them all worthless. I find that the best remedy is a mixture of half a pound of whale-oil soap, two ounces of strychnine, and three pounds of leaf tobacco, boiled in four gallons of water. When half cool, syringe the whole plant thoroughly. Fumigating with tobacco will destroy these insects when young; if left until they get black, they are very hard to destroy, and then fumigating must be done three times in succession. Tobacco smoke cannot be used in all places.

TRANT'S EVERGREEN PEA.

BY "SWIFT," DELAWARE COUNTY, PA.

As most people are not only fond of green peas, but desire to have them continously, so long as the season will permit, I wish to bring to the notice of your many readers 'Trant's Evergreen Pea,' knowing full well that if they once grow it, and taste it, it is sure to become popular.

Having grown this pea for a number of years, I can speak with confidence as to its qualities. For a *late* pea it has no rival; it is of the largest size, sweet flavored, as all good peas should be, a continous and prolific bearer, and never mildews. Where all other peas fail, this still remains green and bearing. Though not strictly speaking an evergreen pea, it is more deserving of the name than the so-called everbearing raspberries.

After trying most methods of raising peas, and growing every variety of pea I could lay my fingers on, I have come to the conclusion that three plantings, and as many different varieties of peas, will furnish green peas for the table, as long as it is possible with any other method, or with any greater number of varieties; that is, from first of June to the begining of August.

Now, as many of your readers may wish to know the *modus operandi*, I here give it:—Presuming that one season is pretty much the same as another, I take the present one as an illustration. On the 12th of April I planted three varieties of peas,—Daniel O'Rourke, Champion of England, and Trant's Evergreen;—second planting on the 22nd of April; third planting on the 11th of May. I gathered peas from Daniel O'Rourke on the 1st of June; Champion of England on the 20th; and Trant's Evergreen on the 1st of July, and continued gathering from this pea into the month of August; in fact, the three plantings had given out, and I was still gathering from my first planting of Trant's Evergreen. It is well to remark that I sowed all the seed I had of Trant's in the first planting. The early peas dried out, Champion mildewed, as is usual with this variety, and still Trant's kept green till midsummer.

The only objection I see to it, is that it grows too tall, (six feet); but, considering all its other good qualities, I forgive it that, and will continue growing it, which is the best recommendation I can give it.

TALKS IN A GARDEN.

Number Two.

BY L.

JOHN L. K.—I think I once heard you say that there are good things in Horace, that I would read with pleasure, when I shall have made due progress in Latin. What has he sung of rural life? he was not a farmer, but was a voluptuary and libertine, was he not?

UNCLE J.—I fear he was a sad fellow, a little fat sybarite, of whom some acts of very questionable virtue are told; but he sang nevertheless such odes as never Roman poet sang before, or has since attempted. Though many of them are but imitations from the Greek, and are artificial, and seldom express the more powerful feelings of human nature, those in praise of country life are excellent. In these he touches on the beauties of nature in a manner that excites our warmest sympathies, and for these he had clear perceptions and an exquisite relish. He was a country boy, and having been brought up on his father's farm, and having a sensible man for his father, who aided him in his education, and gave him every advantage, he was of course himself possessed of good sense, and was withal, which is rather rare, endowed with a pure taste. When you shall have advanced sufficiently to read him understandingly you will admire his Vitæ rusticæ laudes.

"Beatus ille qui procul negotus
Ut prisca gens mortalium
Paterna rura bobus exercet suis,
Solutus omni fœnore:
Neque excitatur classico miles truci,
Neque horret iratum mare:
Forumque vitat et superba civium
Potentiorum limina.

Translated by Dryden, whom no one of his time surpassed in command of the stores of our language, or in free classic sounding versification:

"How happy in his low degree,
How rich in humble poverty is he,
Who leads a quiet country life;
Discharged of business, void of strife,

And from the griping scrivener free!
Thus, ere the seeds of vice were sown,
Lived men in better ages born,
Who plowed with oxen of their own
Their small paternal field of corn.
No trumpets summon him to war,
No drums disturb his morning sleep,
Nor knows the merchant's gainful care,
Nor fears the dangers of the deep."

JOHN L. K.—That sounds very much like some lines I have read, written by Pope when but twelve years old, and which I thought entirely beyond the ability of one so young.

UNCLE J.—You refer to

"Happy the man whose wish and care
A few paternal acres bound,
Content to breathe his native air
In his own ground.
Whose herds with milk, whose fields with bread;
Whose flocks supply him with attire;
Whose trees in summer yield him shade,
In winter fire."

JOHN L. K.—And was Pope but twelve years old when he wrote those lines. He must have borrowed the ideas from Horace.

UNCLE J.—He says in a letter to a friend, written when he had reached his twenty-first year, that he had just found them, by accident, and that when he wrote them he was not yet twelve, and remarks, "You may perceive how long I have continued in my passion for a rural life, and in the employment of it." He too was a country boy, as was Horace, though born in London, in Lombard Street, the very Barbary coast of money brokers and note shavers. I took much pleasure in visiting the room in which he was born, in the third story of the house occupied by William Allen, the philosopher, philanthropist and Friend, who accompanied that true missionary of Christ, Stephen Grelette, over Europe, and whose errand has been so beautifully sung by our unrivalled Whittier. Dont you remember them?

"No aimless wanderers of the fiend unrest,
Goaded from shore to shore;
No bookmen, turning in their curious quest,
The leaves of empire o'er."

JOHN L. K.—I will read them, for they open well; but you seem to have some poetical illustration for every topic, and every name calls up some passage worthy of quotation. Have you not almost reached the end of your poetical lines?

UNCLE J.—My dear boy, you will learn, as you grow older, that to learn with ease first learn to love the study. If the penchant is ours by nature, we need no prompter to urge us to store our minds with passages from writers whose sentiments have given us pleasure, or over whom we have pondered while loitering in "the primrose path of poesy."

JOHN L. K.—There is another phrase that is not your own, but borrowed from some bard, I dare affirm.

UNCLE J.—True, my apt scholar. It is the mission of the poet to set in choicest phrase what all may feel but cannot tell; while it has a higher mission to point out a purer path to mortals, raising them above the dust of the dreary wayside of common life; and though it may not always "set the affections on things above," it may redeem the homely and the trivial from the reproach of vulgarity, and adorn with beauty the commonest and the humblest scenes. Its language is as far removed from the prosaic as are its objects and its aims, and a fitting passage often floods with light and beauty a thought or an expression that would otherwise make no impression. It is in poetry that you find "thoughts that breathe and words that burn;" and the poetic fancy can give to real objects a charm and coloring as readily as it can give "to airy nothings a local habitation and a name." But where are we running to, far away from our subject, "Revenons a nos moutons," we will return to our subject,—the poetic lovers of rural scenes.

JOHN L. K.—Horace, you say, was brought up in the country, and was ever fond of it. I suppose, from the superior education he received, that his father was rich, and he was not obliged to work very hard, and this may account for his pleasant memories of his boyish days. But my country cousins, who are at it early and late, who hoe and dig without hope of release until they shall become old enough to escape to the city, why should they love the farm, associated as its memories are with 'bone labor,' and unrelieved by any of those pleasures of which poets sing, while reclining under the shade of the wide-spreading beech, or, as Virgil has it,

"recumbans sub tegmine fagi,"

where

"lentus in umbra
Formosam resonare doces Amaryllida sylvas."

UNCLE J.—Poverty is thought by many to be unfriendly to intellectual growth; and so it is to that of those whose longings it can check,—who can never burst her chains. But there is a long list of noble exceptions to this charge, and the scroll of history is bright with numberless examples of men who have risen from penury to the highest positions which learning and culture can bestow. To such poverty has been but an incentive to exertion, as opposition but infuses new energy into the nerves of him who is bound to conquer. Many country boys, it is true, are worked too hard, and

have no examples of love of study set before them, and, alas, ever regard books and learning as of no account. Such will never attain to the stature of men, but will be merely 'boys of larger growth.' The responsibility rests upon the parents of such boys, who stunt their bodies by over labor, and their minds by starvation. It is indeed a happy thing for a country boy, that he is not steeped to his lips in poverty, but has some respite from continual toil, and moreover is blessed with parents loving knowledge and competent and anxious to train him in the ways of wisdom and virtue. Would there were many more of this number.

JOHN L. K.—I dare say all those boys you speak of, who educated themselves, and attained distinction, left the farm early.

UNCLE J.—Not all of them. Some remained upon the farm until of age, and then devoted a few years to college, and to law, &c. But let me tell you it was work on the farm that developed the constitution of these men,—work which gave them the stamina, the foundation on which they built the superstructure of their learning and knowledge. I have heard such men assert that no after study can compensate for the loss of early mental training, and they have felt their life long the want of something which was constantly an impediment to their progress, and which they ought to have had, but

> "Which in the docile season of their youth
> It was denied them to acquire, through lack
> Of culture, and the inspiring aid of books."

Had such boys been properly trained at home, permitted to profit by the aid of books and competent teachers, conjoined with the best instruction and exercise in their routine of farm duties, they might have made distinguished agriculturists, might, by their influence and example, have elevated their profession from its low intellectual status, and would not now be obliged to combat the antiquated notion, that mediæval ignorance is a positive requisite for successful farming.

JOHN L. K.—Then you think that the reason why every other profession is ahead of agriculture is, that all the smart boys run away from it.

UNCLE J.—It is, indeed, too true, that many do so desert it. But many of them have greatly erred. I think I can tell you why so many are dissatisfied. It is the fault of parents oftentimes, though not always, that boys become restive of the restraints of home, and long to escape the duties of the farm. Many parents are not competent to instruct their children in the philosophy of their business, and are not themselves interested therein, then why should their sons see in it anything but work. If they can find in farming no intellectual pleasure, will they not seek for amusement elsewhere, and where but among their fellows as crude and ignorant as themselves. What inducements do most parents hold out to their sons to persuade them to adhere to the business of their fathers? Have they any chances to work for themselves,—are they allowed an acre or two to cultivate as they please, and from which they may receive the profits? Are they encouraged to read horticultural and agricultural papers, and to comment thereon, instructed by their parents in the elements of the science necessary to the perfect understanding of each article they read, and trained in habits of industrious, methodical and thoughtful reading, as in every other duty? Are they encouraged to spend a part of their money in books,—to form a library,—to love them and their companionship above that of all the silly, trifling, ignorant boys, with which every one who inclines may every where surround himself, by becoming like them? Are country boys encouraged and taught to observe the phenomena of nature, so interesting to a rightly trained mind? Are they taught to look upon the whole world as a a museum filled with wonders, the interest of which is inexhaustible, and wherein a perpetual round of delight may be found; or do they not regard every thing around them with about as much intelligent concern as does the horse or the ox? This exercise of mind upon the phenomena of nature,—research into her productions,—the study of her wonders,—is one of the processes by which man has raised himself above the brute. It is this exercise of mind, in connection with that growth which springs from obedience to the teachings of the Creator, by which man has become civilized to the extent we find him. Are the sons of farmers encouraged in this pleasing duty,—for it is a duty every one owes to himself to inform himself of the ways of the Creator, whether in the physical or moral world; and no man can refuse to do so without suffering the penalties of ignorance and mental poverty? How many farmers instruct their sons in the reasons for every process carried on upon the farm? How many ever taught their sons how and why a seed grows? How many ever attempted to instruct them in a knowledge of plants: their classification, properties and uses? How many ever encouraged them to study the soils and rocks, and minerals around them, or make collections of objects of natural history or of farm products for their own improvement? How many, in short, care any thing about training the minds of their sons in the way

way that would attach them to their business, by rendering it interesting to the young mind? Since few or none do so, need we wonder at the dislike the young feel for the mill-horse round of labor which brings to them no pleasure and no profit.

JOHN L. K.—I must confess I never saw any farmer's boy brought up as you propose, or any farmer who could so bring up his son. There may be many who might do so if they had time, which I do not think they have.

UNCLE J.—No time to do their duty! How much do they waste in talking politics? How much time do they spend at vendues, where they have really no business? How much in lazily loafing around taverns, exposed to the temptations there displayed? How much in stupid smoking or listless dawdling about without an object.? Let all these precious hours, these many days in every year, be properly employed in useful reading and observation, in elevating the thoughts instead of dissipation, and almost every farmer will find that he has ample time to inform himself upon every topic necessary to be known, both for his own enlightenment, and for the proper training of his sons.

JOHN L. K.—Uncle, I fear your ideas will be considered visionary, utopian, of impossible application. If you could but point to any young farmers who have been educated as you propose, or partially so, and who are the better for it,—it would be more convincing. Do you really know of any such?

UNCLE J.—Not less than three, within three miles of my home: young men who are quite successful as farmers, though two of them were city born and bred, and the third a country boy who has enjoyed the advantages of college instruction. These all love their vocation, and are deeply interested in its progress; they are of course good citizens, intelligent, well-informed, public-spirited and influential young men, though two of them are under thirty years of age.

As to the epithets utopian, visionary, my dear fellow, these have always been applied by the 'slow coaches,' to every proposition that aims to improve and elevate humanity. Know you not there are people living in Philadelphia, who would feel themselves insulted if told that they were 'fogies' who have opposed as needless innovations, as visionary schemes every improvement that has been proposed for the last forty years in that city? Was not the proposed introduction of Anthracite coal attended with great difficulty? how many who thought themselves wise

> "mocked
> Its honest face, and said it would not burn;
> Of hewing it to chimney pieces talked,
> And grew profane and swore, in bitter scorn,
> That men might to its inner caves retire,
> And there unsinged abide the day of fire.
> And yet it has come forth to move the earth,
> And put to shame the men that meant it wrong:
> Becoming coals of fire to those that hate it,
> And warming the shins of all that underrate it."

The introduction of water, of gas, of street railroads, of improved market-houses, and, indeed, every scheme that was demanded by the age has been and will be combatted by that class of people which every age supplies, "who indeed have eyes but carry them at the back of their heads, and see nothing but the road that has been left behind."

JOHN L. K.—Your not over charitable remarks have led us far away from Horace and latin poetry in praise of country life. I do not know how you can see any thing beautiful or desirable in the life of those whom you consider so far removed from what they ought to be.

UNCLE J.—My dear nephew, there is much that is interesting, pleasing, instructive and genial, even in the life of many of our farmer friends. I know many who are cultivated gentlemen, residing on their estates with dignity, who honor their profession, deeming it, as did our Washington, "the most useful and noblest employment of man," To this class I have no reference in my strictures, as must be evident. I refer to the mass of indifferent and ignorant, of which every section of our land supplies examples, who need that every proper incentive should be used to arouse them from their slothful indifference and inexcusable ignorance. But you prefer to hear me talk of Horace.

JOHN L. K.—I have heard you speak of his ode in which he praises his Sabine farm. By the way, don't you think it might be too true, as Juvenal sung,

> "The wine circled briskly through the veins,
> When Horace penned his dithyrambic strains."

UNCLE J.—No doubt he indulged in his loved Falernian, but the ode, a part of which I shall quote, does not smack of the wine press, but it is sober, sensible and good. Hear him.

> Non ebur neque aureum,
> Mea renidet in domo lacunar,
> Non trabes Hymettiæ.
> Premunt columnas ultima recisas.
> Africa neque Attali,
> Ignotus hæres regiam occupavi.
> Nec Laconicas mihi
> Trahunt honestæ purpuras clientæ.

I recall but a part of a translation I met with in "Jack Halyard," when a boy, which made a deep impression on me. I will supply a verse in place

of the second stanza, which I cannot remember:

"My house can boast no beams
With gold or ivory wrought,
Nor marble from the extremes
Of sultry Afric brought."

No guileful art has torn
My lands from rightful heirs;
Nor do I ever mourn
For state or purple cares.

"But Faith and Truth are here,
And learning social, free;
Life's shunless ills to charm,
I ask no more—enough for me
This one snug Jersey farm."

JOHN L. K.—Your translation does not appear to be truly literal. Why do you change his Sabine into a Jersey farm?

UNCLE J.—The version is very close; but who that has seen a Sabine farm would not prefer a good one in Jersey. I would not give mine for the best I ever saw in Italy,—surely not for one in the wide campagna around Rome, where, on one road, for forty miles, scarce a dwelling appeared, except those of the snails, whole villages of which clustered upon the weeds, and were almost the only living inhabitants; nor in the pestilential Tuscan maremma, fertile though it be, whose malaria is felt at points a thousand feet above the plains; nor on Vesuvius, shaken by earthquakes; nor by the 'wandering Po,' whose waters overspread the plains for many leagues, and with it spread the shaking ague and the burning fever,—no, not for an estate in Italy, "land of the orange and the vine," would I exchange a farm "in that delightful land which is washed by the Delaware's waters." And why? Because here we have a sun as genial, skies as bright, and an air more pure: our grapes equal any of Italian growth, our pears ripen on our boughs or in our closets with a luscious sweetness and flavor which exceed the orange, and the peach, our 'emblem of beauty,' attains a perfection that demands no warmer skies.

JOHN L. K.—Why, uncle, you are waxing patriotic.

UNCLE J.—And well, my dear nephew, well may we love our country, our native land. Some one who has travelled Europe extensively, has said, he believed that no man had better reason to be content with his lot than he who with a moderate income, lived on a farm of his own, within ten miles of Philadelphia: for here every comfort, every luxury, that cultivated man desires, or foregn residence supply, may be cheaply obtained, and therewith the luxury of liberty, which no wealth abroad can purchase. And this observer had seen and known European society, and, because he had known it, preferred our own. His judgment, who among us that has enjoyed similar experience, will venture to gainsay!

"O fortunatos nimium suæ si bona norint
Agricolas!"

"Ah! happy swain! ah! race beloved of heaven!
If known thy bliss, how great the blessing given!"

PRUNING EVERGREENS AS PRACTICED AT BLOOMSDALE.

BY WALTER ELDER, PHILADELPHIA.

Several excellent editorial hints have been given in the *Monthly* about the propriety of pruning Evergreen trees, where necessity requires it; and Mr. William Bright, of the Evergreen Logan Nursery, contributed an excellent article on the subject; but few, however, know where to go to see the beauty of the system in practical operation.

During last September we visited BLOOMSDALE, famed the world over as the grounds where celebrated Landreths' Garden Seeds are grown, and as the residence of David Landreth, Esq. Around the dwelling are several acres of pleasure-ground, admirably laid out and beautifully embellished; both the trees and grass bespeak a good soil kept well fertilized. The lawn is all of one kind of grass, of a beautiful green; and by the use of the mowing machine it is kept perfectly smooth. Mr. Landreth has, for the past twenty years, been experimenting with the various species of grasses, for the purpose of ascertaining which is the most suitable for a lawn. His efforts have been crown with success, as is evidenced by his own lawn. The grounds are finely studded with ornamental trees and shrubs, two-thirds of which are Evergreens, judiciously selected and skillfully arranged, and kept symmetrical and thrifty by scientific pruning. Yearly are their spreading branches cut back, leaving them broad at the base and tapering gradually to the main leaders at the top. The grass is allowed to grow rankly among them. They put out a great number of shoots behind the cuts, which fill up all openings, and makes such a density of foliage that no part of their wood are seen. They are the most healthy looking trees imaginable. Firs, Pines, Junipers, Piceas, Cedars, etc., are all equally ornamental.

Those who wish to grow a large number of Evergreen trees upon a given piece of ground, and have every one a gem, should visit Bloomsdale, to see the advantages of scientific pruning there; and also to see the beneficial effects of properly preparing the ground: by deep tillage, a year's fallow, with green manuring, clearing the soil of weeds, and

using every means of preparing the soil within reach, before laying out, planting and sowing.

Professor Mapes, and many other agricultural philosophers, have greatly enlightened the husbandman in the art of using the subsoil plow and subsoil lifter; but a far more convincing proof is this living picture displayed at Bloomsdale by the practical skill and wisdom of Mr. Landreth.

Much praise is also due to the gardener, Mr. Patrick McDonelly, who has had charge of this department for eighteen years. He assisted in preparing the land, laying it out, and planting, sowing and pruning; and has kept the whole in admirable condition during his long stewardship.

CHRYSANTHEMUMS.

BY "RUFUS."

I have long been a reader of the *Gardener's Monthly*, but have never felt myself qualified to write for its pages, though I have often felt an inclination to say my say on some of the questions that once in a while come up. I often wish I could write as well as I think I can work, and then I would give you my thoughts on many of the practical questions I see discussed. My employer thinks few can grow Chrysanthemums better than I do; and indeed it is more by his encouraging me that I should write out my plan, than by my own presumption to do it now. He thinks you would polish off any inelegancies of style and language, and make my rough notes look as good as the best. So I try.

One can make plants in two ways. In one take suckers in March, of plants that have flowered the fall before; in the other, let the suckers grow six inches long, and then make cuttings of them in April. It may seem a simple difference, but I am sure the cuttings make dwarfer, stockier and healthier looking plants,—and the best looking in every way. The cuttings root very easily in any close place, where they will not wither greatly; but yet not too cool and damp, or they will rot before they root.

About the first of May I pot off into three-inch pots, pinching off the top at potting. After potting they are set in a shady place for a few days, until the roots push a little, when they are set in a frame until the middle of June, when they are repotted into four-inch pots, and pinched back again *two weeks after* this potting. The pinching back is simply nipping out the heart of each little branch. About two weeks after this the plants are repotted again into fives, then, two weeks after, nipped again, and two or three weeks after, potted into sixes. This brings them to the middle of August, when they are pinched back or repotted no more. The greatest trouble with the Chrysanthemum is to make them keep all their foliage well on till they flower. This can only be done by keeping the roots very healthy. If they are put into too large a pot at each shift, the soil becomes sour or sodden before the roots push through into it, and then the points of the fibres decay away, when the oldest leaves are sure to turn yellow, or in some other way get sick. This is what we call a plant being injured by over watering. When a plant is repotted to one but a little larger, the new soil retains no more moisture than the roots can suck out and use every day or so, and none can stay in to sour the ball. This is why I pinch off a few weeks after potting: by pinching I find the production of roots temporarily checked, always and in any case; and instead of checking roots at repotting, I want them to run into the new soil as quickly as possible.

In regard to soil, I find very rich soil of no benefit to the Chrysanthemum. About a fourth or fifth of two-year old hotbed dung, thoroughly incorporated with turfy rotten loam, I find as good as can be used. I do not like coarse, but very finely pulverized; and of course, for this to be done, the soil must be used in a dryish state. I do not like the plan of riddling the earth fine, as it takes out the fibre of the old turfy loam which I consider important. Large lumps of undecayed manure in the soil is very injurious to the foliage of the Chrysanthemum.

After the plants are potted into four-inch pots, I set them out in the open air, where they do not get the midday summer's sun; but plenty of the morning and evening rays. Of a choice, however, I would prefer the full sun all the time, than too much shade, which the Chrysanthemum does not like at all.

I attach very great importance to preserving the foliage healthy to the last because the flowers are always the finer for it; and because a Chrysanthemum in flower without healthy foliage, and an abundance is, I think, one of the most pitiable sights we can see in a conservatory with any pretension to elegance or taste.

I like the single stem plan of raising the Chrysanthemum, for the same reason. Many, to get a large mass of flowers, grow ten or many more stems in one pot. These always starve each other. The leaves are small and poor, and the flowers comparatively so. A forest of sticks have to be employed to train out and keep each shoot in its place; and

the whole thing looks like an unwilling conscript standing ill at ease in company drill. The single stem plan, with most varieties, requires but one or two stakes at most,—the flowers standing out on stiff healthy side branches: hanging at best only a little by the weight of their heads when in blossom, and then only sufficient to lend a little grace to a rather artificial looking plant.

I was going to add a list of what we consider our best dozen; but from what I know of Chrysanthemum culture near Philadelphia, when I was about there, you can make a better selection for us than we could for ourselves.

[We would not say which are the *best* 12 Chrysanthemums, but the following is a good selection:

SIX DWARF OR POMPONE.

Turris Eburnea, white, Tenello, orange,
La Sibyl, yellow, Roi des Lilliput, purplish
Brilliant, crimson, crimson,
Reine des Pannaches, purple and white.

SIX LARGE-FLOWERED.

Eclipse, white, St. George, orange,
Bouquet Blanc, blush, M'nt Vesuvius, crimson,
King, large cupped white, Anemone-flowered kinds are curious.

Madame St. Simon and La Rausse, are two good ones.

Our advertiser, Peter Henderson, has three superb ones from Japan, very distinct from the common forms, and which will have an immense run:—*Grandiflora* is very large, with peculiar strap shaped petals, golden yellow and very double. *Laciniatum*, beautifully fringed, magnificent, a great favorite with the ladies. The following is an illustration of this beautiful thing. *Japonicum* has remarkably twilled petals, orange and brown, and standing erect, while the whole flower nods, making it look precisely like a rich tassel.]

[CHRYSANTHEMUM LACINIATUM.]

AN ACCOUNT OF SOME OF THE GRAPERIES AROUND WILMINGTON, DEL.

BY MISS ——

The public must have some mania upon which to rage. A year or two ago Graperies were the mania. At present it is Petroleum,—what will it be next? Now, Graperies have become fixed 'institutions;' formerly they were only 'experiments.' No person of means now thinks of omitting his Grapery on his place, any more than he would his ice-house.

But we do not propose to philosophize, but to give an account of some of the Graperies that we saw while on a short visit to Wilmington, Delaware.

The first place that we visited was that of Dr. George Pepper Norris, a gentleman well known to the readers of the *Monthly*, from his frequent contributions to the same. Through the politeness of his gardener, Mr. John Landers, we were enabled to see his Graperies. These are no less than five in number, the dimensions of which, kindly furnished us by his gardener, are as follows:

No. 1.—135 feet long and 14 feet wide; built of stone; lean-to; heated by two furnaces in different ends of the house, and divided by a partition in the centre. This house is forced.

No. 2.—38 feet by 12; built of stone; lean-to. This house was originally built for a pinery, but was recently altered into a cold grapery.

No. 3.—70 feet by 12; built of stone; lean-to; heated by one furnace. Forced.

No. 4.—70 feet by 15; built of brick; lean-to; heated by one furnace. Forced.

No. 5.—48 feet by 12; built of wood; lean-to. This house is a cold grapery, and was the first one built by Dr. Norris. It was managed by himself alone for some time.

In Nos. 1, 3, and 4, borders are both inside and out,—the vines being planted on the inside. In No. 2, the vines are planted on the outside, and brought through a hole in the wall. In No. 6, the borders and the vines are both on the inside.

Thousands of Peach and Pear trees, both standards and dwarfs of the latter, as well as many fine specimens of ornamental trees adorn the Doctor's place. And then his house,—but we could write many pages upon this delightful place of the Doctor's, had we the room.

The next place that we visited was that of J. Taylor Gause, Esq. His place is situated about a mile from Dr. Norris'. The main attraction of the place is the *Grapery*. This is an elegant and double span house, 75 feet by 24. We were politely shown through it by his gardener, Mr. Patrick Dougherty, who informed us that the house was a new one, having only been planted with vines last April. Some of the vines had already reached the top of the rafters, and evinced the fact that they had been well managed. The house is a very handsome one, and is one of the lightest graperies that we have ever been in.

We should have visited other places, but rain prevented us, commencing shortly after we had left Mr. Gause's place. We therefore took our seat in an afternoon train for Philadelphia, well pleased with our visit, and having a very high opinion of Wilmington graperies.

GOSSIP FROM CINCINNATI.

BY WM. HEAVER.

Not having seen any reference to the doings of the Cincinnati Horticultural Society in the pages of the *Monthly* for a long time, I inclose you a copy of our Proceedings,—it is some weeks old, and I unfortunately have no others at command at present, but will endeavor to procure the numbers from the commencement of its publication, thinking you may glean from its pages some items of interest to your readers; but if failing that, I will at least let you know that the Society still exists, and that notwithstanding the adverse circumstances under which we have labored during this most, (to us) unfavorable year,—of disaster and disappointment,—we still continue to labor and hope for more favorable results in the future.

The Horticultural record of this region for the year 1864, will be of a most unfavorable character in Pomological history,—no Cherries, no Plums, no Apples, no Pears, no Peaches, no Grapes,—and were it not for the attention of distant friends, in some few instances, occasionally sending us specimens, the Standing Committee on Fruits would have been perfect sinecures, as far as Official duties were concerned.

I think it is well for us to have a medium like the *Monthly* to inform us by its reports of the Pomological Society's doings; and the proceedings of the Pennsylvania Horticultural Society shows that our Eastern friends and co-laborers have been more favorably blessed with the abundance of the earth's good things.

I agree with you in your remarks touching the introduction of new seedling Grapes. The Peabody Strawberry *Humbug* is being reproduced in more than one species of fruit just now, and many of your readers will hereafter regret that they were induced to pay high prices for new articles inferior to many old-established favorites, procurable at moderate, and in many instances, trifling cost.

You will no doubt think this Gossip enough for once, so conclude.

[We have received the reports regularly from the Secretary, and shall make use of them. We do not hear as often from our Cincinnati friends as we would like to do.—ED.]

The Gardener's Monthly.

PHILADELPHIA, JANUARY, 1865.

☞ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

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THE PLUM.

Careful observers have noted that as a general rule, those fruit trees that branch low succeed the best. We are so accustomed to see orchards with high trained trees for the purpose of plowing, cropping, or grazing under them, that few have any idea of the extra productiveness of low branched trees. We have seen the apple and peach in Pennsylvania so treated, and are quite sure their owners would not change their methods of pruning for all the orchards in the State. True, they cannot dig under or crop such orchards, but they find it to their advantage to give up the whole ground to the trees. They then plant double the quantity of trees usual; they come into bearing earlier, and are every way healthier and better. Mr. David Miller, one of the best orchardist in this State, and who is a warm advocate of low-trained trees, says the trunks of the trees so grown thicken to a given diameter in considerably less time, than a tall-trained one. This also accords with the principles laid down in timber management. Some, in order to get a clean straight stem without knots, trim up severely when young: such trees immediately become hide bound and mossy; their growth is slow for some years after; and the trunk does not increase in size until a large head has grown sufficiently to feed and shade it. So, in order to gain the straight clean trunk without serious injury to the growth, the side branches are taken away very gradually,—a few each year. The injury to the growth of even this slight trimming, is acknowledged; but something has to be sacrificed for a knotty base. The timber is of small consequence in a fruit tree. Good healthy growth and productiveness is of considerably more moment than all.

We will take it as indisputable, that the tendency of low branched trees is to a much more healthy condition than in the usual form: and applying it to the Plum, assume that it would be much more successful than in the common way, as we generally see it. The Curculio is much more destructive to the fruit when the tree is unhealthy than otherwise. Whenever the fungoid excrescences, known as the 'knot,' abound, the slightest puncture of the Curculio on the fruit causes it to rot and drop long before it is ripe; but when the tree is healthy, many plums, although marked severely by the insect, will not suffer at all thereby,—and not half the crop drop before ripe. There are, we know, good pomologists who maintain that no insect will attack perfectly healthy vegetation. They deem insects scavengers of nature, whose office is to put away matter no longer of service in its proper department. We are not one of this class; but do certainly think the injury from insect attacks is much more destructive to sickly trees than to healthy ones.

We were very much struck by these considerations, by noting the condition of Ellwanger & Barry's Plum orchard last fall. These trees were very low-branched, and so thickly planted together, that they constituted a real Plum orchard. Nothing else was grown with them, and we guess the soil was not deeply stirred, but simply kept clean by the cultivator or hoe. There were immense crops on most of the trees, and care was taken to keep down the Curculio by gathering up the fallen fruit, and other processes well known to the reading community. Still it was evident, though it might be 'scotched,' the enemy was not 'killed.' Marks of Curculio abounded,—but, and no mistake about that, there were the plums, and plenty of them. Perhaps the great number of trees on the space of ground afforded enough fruit for the proprietors, visitors, curculio and all,—but the additional health of the low-branched trees, we are very sure, had much to do with it; while the very fact of low-branched trees being used, by taking away all temptation to have other crops with them, had its proper influence in its own way.

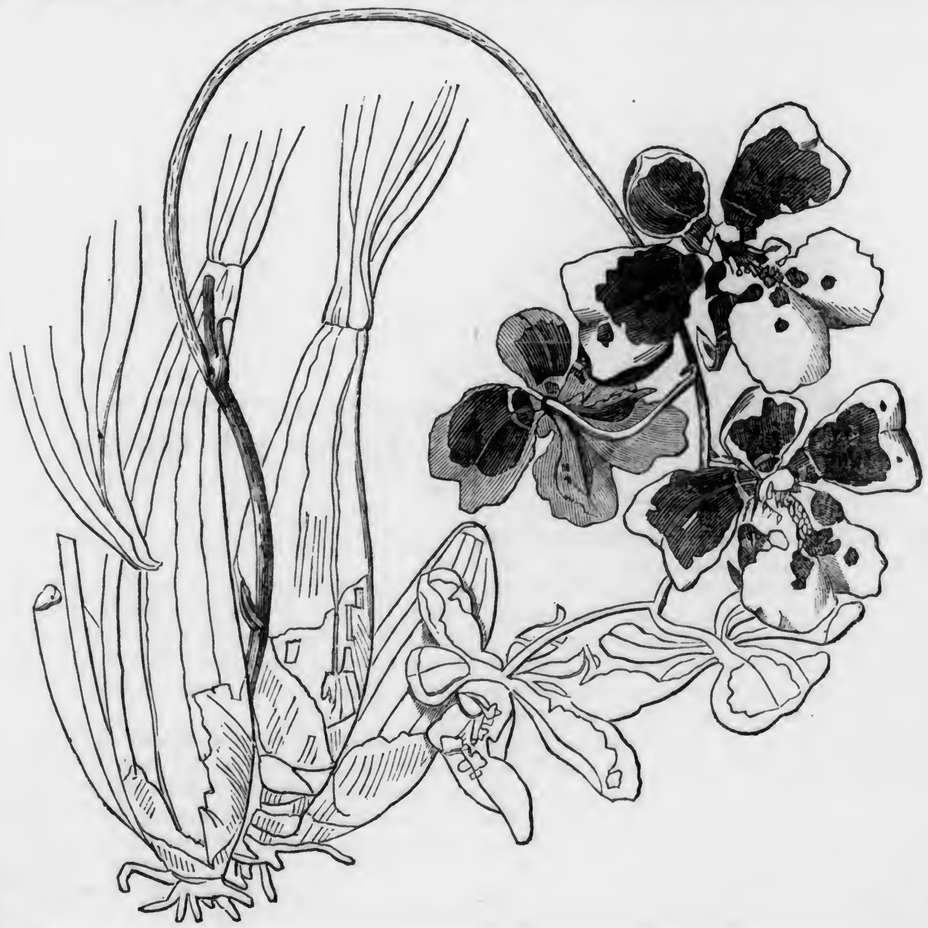
The Plum is fast going out of out-door cultivation. It is not pleasant to see our hopes of cultivating this delicious fruit thus wrecked without some determined effort to save them. Taking Ellwanger & Barry's success as a beacon light, we do not see why others may not be encouraged, and by using low-branched trees,—well prepared, and well selected soil,—close planting, and encouraging surface roots, to insure health, bring again into popularity a fruit which, if we could get it with certainty, not all the golden productions of the Hesperides would tempt us from.

ORCHIDEÆ OR AIR PLANTS IN COLD GREENHOUSES.

On entering a friend's Greenhouse lately, a beautiful Orchideous plant in bloom (*Maxillaria picta*) reminded us how little these singular plants are known to the floricultural public generally. The reason no doubt is that they are usually considered to require a very high temperature, and a house of peculiar construction,— and after all this first expense, a degree of skill few persons can afford. If it were generally known that many of them could be grown in a common greenhouse, as easily—perhaps more easily than a geranium or a fuchsia,—we are quite sure very few plant growers would be without them.

Not only are their flowers curious, mimicking in their various forms birds, bugs, and butterflies,—but the showiness and fragrance of the blossoms rival the Rhododendron or the Jasmine,—while the curious nature of their growth: hanging by adhering aerial roots to blocks of wood, or pushing the same fibrous feeders through moss or rocks or stones, in search of air and moisture, on which they seem to feed; all afford a charming interest in all stages of their growth at all seasons of the year.

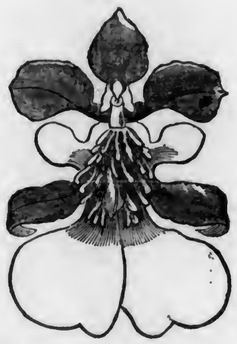
Most of our readers have some idea of these wonderful forms of vegetation, through reading about their remarkable appearances,—for all have probably read of the Holy-Ghost plant, with flowers resembling a dove,—the Butterfly plant, the Bee orchis, and so on, from their striking resemblances. To enable those who have not seen them to form a better idea of them, we give an illustration of one of the most numerous genera,—the *Oncidium*. This is a Brazilian species, *O. sarcodes:*



This orchid,—and it is a type of most of them as to general habit of growth,—creeps along through the moss in which it grows, in the branches of trees. It creeps slowly, for many of them go only far enough to throw up one of what is called the pseudo-bulbs every year. The three represented in the engraving, are probably the products of three successive years. About every third or fourth year some die away, so that but a few are left to each creeping rhizoma, as the underground root-stalks are called.

The leaves seem to proceed, as represented, from the top of the pseudo-bulbs, which are indeed but thickened and united leaf-stalks. These are cut off in the engraving. The aerial roots come out at the base of the pseudo-bulbs, as do the flower stems in due season.

We have given this cut so as to show the whole habit of the plant in its roots, mode of growth, and flowering state; but it does not afford a good idea of the peculiar formation of the flower: to this end we give an illustration of an individual flower of another species of Oncidium, also from Brazil, *O. Pinellianum.*



The Maxillaria we saw so splendidly in bloom recently, was grown in a greenhouse, where the temperature in winter is never over 60°. It was but 55° when we were there there. The gardener informs us that he flowered here three species of Bletias, Eulophias, Zygophyllums, and many others. The plants, even those that usually grow on blocks, were set in pots filled with old moss, broken pots, and a little earth. The one we particularly refer to had been in the same pot six years, flowering freely every year. It had no peculiar treatment. It was watered regularly like "any other plant," with this in its favor, that it will not threaten to die away, as other plants, if it should be neglected in watering for a few days or weeks. The house was very closely glazed, and was rather moister in consequence than many houses we see, and in this respect orchideæ would have an advantage.

We give a list of the following kinds that will do well in a greenhouse, so long as it is absolutely free from frost:

Zygophyllum Makai	Maxillaria picta,
Bletia hyacinthina,	" Harrisoniæ,
" rubicunda,	Phajus grandiflorus,
Lælia superbiens,	Cattleya mossiæ,
" autumnalis,	" crispa,
" purpurata,	" Skinneri,
Cypripedum insigne,	" guttata,
" venustum,	" aclandiæ,
Trichopila tortilis,	Lycaste Skinneri,
Oncidium flexuosum,	" Harrisoniæ,
" ampliatum maj.	Ontoglossum grande,
Broughtonia sanguinea,	Schomburgkia undulata,
Dendrobium moniliforme,	Epidendrum vitellium,
Barkeria Skinneri,	" atro-purpureum.

In Europe, the plants in this list would cost about three dollars each. Here they might probably cost a trifle more; but once possessed, we are well sure no lover of sweet and beautiful flowers would be without them for tenfold their cost.

The supposed great expense of their cultivation, has so limited the demand for them, that among all our advertisers we do not remember any one who has a fine collection of them, but Mr. R. Buist, near Philadelphia, and Mr. I. Buchanan, near New York. If any others have them for sale, we will gladly make it known through this department.

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.

Succulents.—A New-York correspondent remarks:—"I am anxious to make a collection of Sedums, as they worry along in my room without much attention, and are always pretty and interesting."

[We publish the note because we think due attention has not been given this singular tribe. No other is so well adapted to room culture in cities. Most of the Sedums are perfectly hardy. While most kinds of succulents will 'worry' along without water or care, these will defy frost also. We saw a splendid collection of them on the grounds of Ellwanger & Barry last summer.]

Fruit Growing in Southern Maryland.—A correspondent writes: "That with the change of Maryland from a slave to a free state, an immense impetus will be received by the fishery, sheep raising, and fruit growing interests of that portion of the State," and asks us to give a complete list of fruits best adapted to that portion of the Union.

We give the following as the best within our knowledge; but as we suppose with the spirit of free labor enterprize, the list will be pronounced somewhat 'old fogyish;' and if so, we ask those who are better acquainted with the country to give us a better one:

3 *Summer Apples*–Red Astrachan, Sweet Bough, Carolina Red June. 3 *Autumn*—Porter, Gravenstein, Fall Pippin. 6 *Winter*—Baldwin, Monmouth Pippin, Northern Spy, Rambo, Rawles' Janet, Waugh's Crab.

3 *Summer Pears*—Doyenne d'Eté, Kingsessing, Bartlett. 6 *Fall*—Belle Lucrative, Beurre Bosc, Beurre Superfin, Sheldon, Seckel, Louise Bonne de Jersey. 3 *Winter*—Winter Nelis, Lawrence, Passe Colmar.

6 *Cherries*—Black Tartarian, May Duke, Coe's Transparent, Gov. Wood, Early Purple Guigne, Downer's Late.

6 *Peaches*—Hale's Early, Troth's Early, Early York, Crawford's Late, Ward's Late, Stump the World.

6 *Plums*—General Hand, Huling's Superb, Jefferson, Washington, Lombard, Bleeker's Gage.

3 *Apricots*—Moorpark, Large Early, Peach.

3 *Grapes*—Concord, Clinton, Diana.

Peppermint Oil.—An Apothecary writes from Bremen, Germany, that Peppermint Oil is adulterated with the oil extracted from the plant called *Senecio hederacifolia*, and also with an oil distilled from petroleum,—the latter is difficult of detection, as far as smell and taste is concerned,—and a correspondent asks for further information. *Mikania scandens* is probably meant by *Senecio hederacifolia;* but we do not think any essential oil could be extracted from the plant. Can any of our readers inform us?

Cranberries.—Very few have any idea of the great profit of this crop, when managed by good sense, combined with scientific acquirements.—Some few years ago, we enjoyed a few hours, though in a terrible rain storm, examining the plantations of Mr. J. A. Fenwick, near Hanover Furnace, N. J. A correspondent writes, that from one of the 'bogs' we saw 150 barrels were gathered this year, and that 41 have already realized, clear of freight and commission, $534; and that the whole will probably realise $2000. Pretty good for 'worthless' lands.

Forcing Grape Vines—'*Vitis*,' *Cleveland, O.*—"Is it any injury to force grapes early, whose roots are entirely outside, and the tops only in? Some say I will materially injure the vines if I try; others say it can be done."

[You can do it, but not do it well; there will be crops, but not fair crops. The bursting of buds and leaf growth do not depend on root action, for grape eyes will grow before they have roots. Heat starts the buds, and the roots supply the demands of growth. This they will do at any season of the year, when not actually incased in frost. But in severe weather, or when the border is wet or cold, root action is sluggish, and growth is more feeble than when the roots are in the most encouraging circumstances. Hence, the best results are obtained when the roots of the grape vine are under complete control, as well as the branches.]

New Plants and Fruits.—A Wisconsin correspondent asks where some of the new plants and fruits described under our foreign intelligence can be had in this country. Usually our notes are a year in advance of their appearance here, and serves to call attention to what may be worth introducing.

Our "Foreign Intelligence" is the *cream* of the foreign journals carefully *skimmed*, to save our readers the necessity of subscribing to foreign papers, and to save them time in wading through so much, even did they get them.

Every one should carefully bind and preserve the *Monthly*. The new fruits and flowers that annually appear here, can usually be found fully described in back volumes. A *live journal* generally serves its readers best by being rather ahead of time than a year or two behind it.

Fungus in Cutting-boxes—*P. S. B., Brooklyn, N. Y.*—"I have read in past numbers of the *Monthly* much about this pest, but have found no remedy against its ravages: I have tried all ways, and nothing does. There is to be much bedding-out stuff prepared for our new styles of flower-gardens here next year, and I am failing badly. What is the best thing you can recommend."

[The fungus, if it ever attacks rooted cuttings, seldom does them much harm,—while it will clean out a box of unrooted sprigs in 'double-quick' time. The best policy is, therefore, to root them as rap-

idly as possible, so as to get them early out of danger. Great heat and partial shade is the remedy: with a heat of 70° or 80° you can root your 'soft stuff' in ten days or so. The fungus will hardly find them out within that time.

Coal Oil against Insects.—We have had no experience with this this. The vapor would no doubt prove very annoying to insects, but it would soon evaporate. Coal tar would be more lasting, and so far better. We saw last year a bed of seedling cabbages saved completely from the Cabbage-flee by a few boards with gas tar freshly spread over them,—while a neighboring bed, unprotected, was completely destroyed.

Honey Locust Seed—*B., Earleville, N. Y.*—There is no need of soaking these seeds before sowing, if you get them in the ground early in spring; or, unless they are very dry. The practice at best is dangerous to all seeds, and is no benefit if the seeds have been properly preserved and sown in season.

Cuttings of Delaware Grape—'*A Subscriber*,' *Grafton, State illegible.*—There is no difficulty in rooting this or any other grape, if the cuttings be taken off early enough, and buried in soil until wanted for planting, which should be as early in spring as possible. Make cuttings now, using two eyes: one where the roots are to push from, the other for the shoot. In planting, set the cutting down to the top eye.

Stock for Kilmarnock Weeping Willow.—A Maine correspondent asks: "Since the common Weeping Willow is not hardy here, I would be obliged if you would state which willow will make the best stocks for working the Kilmarnock and New American on."

The Goat Willow (*Salix caprea*) is the only willow we know that will make a good stock. We have failed to make it unite on any other; and we believe no other is used.]

Errata.—In Mr. Walter Elder's article, in the December number, on 'Deciduous Flowering Trees,' &c., for the word 'trees,' in second paragraph, second line, read 'these;' and in the third paragraph, first line, insert 'the most stately,' before 'shrubs.'

Hardy Ivies.—The Algerine is tender,—the Russian the hardiest. The smaller the leaf the hardier the variety, is the rule with Ivy.

Books, Catalogues, &c.

Our Farm of 4 Acres. New York: Published by James Miller, 522 Broadway.

Mr. Miller is doing the public a valuable service by the course of publications on which he is engaged. Never was so much attention turned towards country homes: by citizens in reduced circumstances, and others who from motives of bodily health or mental requirements, find the change from the city to the country, one of the most desirable in the world to them.

"Ten Acres Enough," by the same publisher, is now well-known, and has already had a very beneficial influence on the community. The present is a reprint from a London work, so popular in England that it has already ran through twelve editions. Like "Ten Acres Enough," it is evidently apocryphal in its adornments, though, as in that work, sufficiently founded on fact to make it one of the most useful to the many citizens with whom removal to the country is a momentous question.

The book is supposed to be written by a lady, who suddenly finding herself a widow with six children, and but a small income to support them, from motives of economy, which her common sense. in spite of the prophecies and experiences of her 'friends,' taught her was a characteristic of country life,—decides to look out for a "small and genteel place at a moderate rent." The first difficulty was to find *the* place. This investigation occupies the second chapter. All the "desirable country residences," at a "moderate rent," advertised in the *Times* were examined in turn, and found to be most undesirable 'comforts,' at exorbitant rates. This chapter is good enough for a Philadelphia atmosphere, having ourselves breathed in an air of similar disappointments. Some years ago an advertisement appeared in a Philadelphia paper offering a "splendid country seat," near Burlington, N. J.,—the owner with another place in Burlington, having no further use for the country seat. The journey from Philadelphia was made, and at the residence of the owner in Burlington, a respectable carirage with driver was in waiting, to drive to the "splendid country place." Some six miles from the town the driver pulled up at a miserable cabin in the wilds, compared to which the 'Heathfield House' of our present author would have been a palace indeed. A glance at the 'Ten acres' was 'enough,' and we are sure no innocent man ever so narrowly escaped a horse-whipping as the unfortunate driver of that carriage. Other victims might have visited the 'country seat,' by that conveyance, but we doubt if the same driver took them. We have no doubt he appreciates his experience 'even unto this day.'

Returning to the book: with a suitable place at length discovered by common sense in place of common advertisements, the story turns to the getting of the first cow, then another, and to butter making, at which the lady herself has to turn dairy maid. Her experience in this line affords the chief interest in the book, and is very naturally drawn. Then comes chapters on pigs, poultry and pigeons, during the calculations of the profit of which said pigeons, we wondered if our neighbor takes into consideration the food they get at *our* expense. Curing hams, making bread, kitchen garden, and then follows "the money we made,"—the point of points with the multitude. Let us say that on this hand the author is very moderate indeed. The romance of the work, in fact, does not exhibit itself more in its "crops of maize," in the English climate, than it does by the figures; but—and which is very unusual in such pen and pencil sketches—on the moderate side.

We are not advised of the price, but the book is small; and no one who would like to have a "farm of 4 acres." but will find in it material wherewith to pass a winter's hour profitably away.

Flore des Serres.—By M. Louis Van Houtte, of Ghent, Belgium.

We have received of M. Van Houtte a series of numbers of this well-known work, now in its 15th year's existence. It appears every week, and contains four colored (and most beautifully colored) plates of the most interesting new plants introduced into the gardens of Europe. In the numbers before us are beautiful Roses, Double Portulaccas, orchidaceous plants, leaf plants, (one of the most prized in Europe is here figured in the person of our native *Goodyera pubescens*, or Rattle-snake Plantain of the woods), and our old acquaintaince, the green-centered Helianthus, which seems to excite the peculiar admiration of M. Van Houtte. Otto, of Berlin, tries his hand at a name for it, in the form of *Helianthus Californicus centrachlorus*. M. Van Houtte throws this overboard (why we know not), and introduces it as *H. Californicus insignis*. He gives due credit to our friend J. W. Jones for sending it to him, and says he never saw so fine an eclipse of the Sun!—the Dahlia has no beauty to contest the palm of beauty with it. Its disk is occupied with a green shade of metallic brilliancy, &c.

We are sure the next best thing to enjoying the living rare plants here described, is the possession of these beautiful plates of them. Our advertiser, Mr. C. Raoux, of New York, is the American agent for the work.

New and Rare Fruits.

The Chasselas Vibert Grape.—This Grape requires to be well grown, and then few can beat it. It ripens early, and the berries are very large, round, and of an amber color, and the flavor that of the Sweetwater. I have twice carried off prizes at the Crystal Palace with this Grape: the first year a first prize, and the following year a second. The roof of my orchard-house, (2400 square feet), has been for some time covered with the finest ripe Grapes; the rods were introduced into the house about the end of April, the Peaches and Nectarines having been sufficiently forwarded by heat, so as not to be injured by the shade of the vines; forty-eight dozen of Peaches and Nectarines were gathered in one day, and the flavor was excellent.—*Cot Gardener.*

New Cantaloupe.—Amongst the seeds of Cucurbitis which were kindly sent to us last spring by Monsieur Naudin, were those of a Melon (under the name of White-fleshed Cantaloup), we believe of Algerian origin, which had been pronounced by Monsieur de Maisonneuve, who explored the Botanical riches of Algeria with such success, to be the most delicious of all the Melons.

Three plants presented fruit of three distinct forms, though all evidently belonging to the same variety, the seed of which seemed to be pure. In the first, the fruit was elliptic, very deeply nine-ribbed, with the interstices still showing short distinct hairs, slightly warty, and very sparingly if at all cracked or netted, with the perfectly smooth apex projecting like a broad nipple with a central scar beyond a corky lobed ring, exactly as in the varieties of Cucurbita maxima, knowns as Turbans or Turk's Caps. In the second the characters were the same, with the exception that the form was globose instead of elliptic; while in the third, there was no projecting nipple, but in its place a broad strongly warted circular area, as in the variety known as the large Germek. In all, the stem flowed gradually into the fruit, and the color was a

delicate buff, while the flesh, in the only one we had an opportunity of examining, was of a washy white slightly tinted with green, of a tolerably firm consistence and high flavor, while the scent was most delicious, resembling that of a pure Green Cabul; the flavor was excellent, and the flesh not the worse in our opinion for being rather firm, like that of most of the Cantaloupes. The variety, at any rate, is very handsome; it grows to a large size, and where more than one sort is cultivated, is a desirable change.

The variety, which comes very near to our white-fleshed Cantaloupe, is called the Prescott Cantaloupe. It is of a roundish form, depressed at either pole, with a prominent umbilicus, and attains a larger diameter of 5½ inches, and is yellowish when ripe, and ornamented with dark green spots; the umbilicus prominent, surrounded by a coronet of network, and marked in the centre with a similar spot.—*Gardener's Chronicle.*

New or Rare Plants.

New Chrysanthemum.— *Chrysanthemum japonicum*, evidently a distinct species, with smaller and deeper indented foliage than the old Chinese varieties; the flower is perfectly double, about two inches in diameter, each petal having the appearance of a thick thread, yet open enough to be seen individually; the color on each petal is an alternation of crimson and yellow, resembling in some degree *Oxalis versicolor*. A well grown plant of this novel species is at once striking and beautiful.

[We have the above memorandum from a correspondent, and insert it here as confirmation of what we have said of it in another column.—Ed.]

Acer Lobelii.—Mr. Newton having, in a late number of the *Journal of Horticulture*, drawn attention to that fine American tree, Acer macrophyllum, allow me also to describe another fine Maple, Acer Lobelii (Tenore), which, although introduced into England about the same time as Acer macrophyllum, is still very rarely to be seen in pleasure grounds, and almost unknown, except in a few of the leading nurseries.

The Acer Lobelii was first brought into notice and critically described as a distinct species about half century ago, by Professor Tenore, of Naples, in his "Flora Neapolitana." More recently, Mr. George Don, in his edition of "Miller's Dictionary of Gardening and Botany," by some oversight not easily accounted for, makes Acer Lobelii and platanoides the same species; while Mr. Loudon, in his great work, the "Arboretum Britannicum," puts it down as a variety of Acer platanoides, but with a remark that "it is one of the most beautiful Acers in cultivation." No two species of Acer, however, can be more distinct or dissimilar in habit than Acer Lobelii and platanoides, for Acer Lobelli has an upright-growing head, rather thinly furnished with branches and branchlets, and glossy pea-green shoots, striped somewhat in the manner of those of Acer striatum, or the Snake-barked Maple of America. The shoots are also more remotely clad with leaves, which are seldom more than 3 or 4 inches broad, but thick in texture, glaucous green in color, and bluntly lobed; while those of the Norway Maple (platanoides) are dark green, thin in texture, acutely and distinctly five-lobed, and 6 inches broad. Again, the Norway Maple only forms a medium-sized tree, with a dense, leafy spreading, round, bushy head, full of irregularly extended branches and small spray of a dark brown color, when matured; while the Acer Lobelii, on its native mountains in Naples, forms a large erect tree, with not very many branches or much spray, but with a rather stout, erect, straight, glossy, pea-green shoots, more or less streaked with white. The leaves are very slightly heart-shaped at the base, quite smooth, thick in texture, shining above, and of a glaucous green color, with the lateral lobes of the leaf less developed and abruptly pointed.

The Acer Lobelii is said to have been introduced by Lord Coventry, and first planted at Croome, his lordship's seat near Worcester, where, according to Mr. Loudon, the finest specimen of the tree in England was to be seen in 1839, it being then 20 feet high, and in some years it bore seeds.

The tree is perfectly hardy, of rapid growth, and one which certainly deserves to be planted in all pleasure grounds or parks, on account of its stately appearance and cheerful aspect. It was first introduced into England in the year 1826, according to Mr. Sweet.—*George Gordon, A.L.S.*

President Lincoln Rose.—A curious mixture of lake and lilac crimson, good to the very core, imbricated, outer petals reflexing, in the way of Lord Raglan, and equally desirable. Described by Messrs. Paul & Sons.

Phrynium (Maranta) picturatum, Lind.—This truly splendid plant is without contest one of the best Marantas introduced up to the present time. The honor of introduction belong to the botanical traveller Wallis, who discovered it in the dense forest of the Purus. It is of a moderate size, and of a compact habit. The leaves are of a dark satin-like green, embellished by a large central line surrounded by an undulated silver discus. A specimen of this fine species was sent to the Royal Horticultural Society's Exhibition of the 24th of August, and received a Second-class Certificate.

Ageratum Mexicanum variegatum.—A great acquisition to our variegated plants. It is in all respects similar in formation of flower and foliage to the well-known *A. Mexicana*, but the leaves are distinctly and clearly marked with white marginal lines, occasionally shaded with purple.

Passiflora fulgens, Wall.—A very distinct climber, with large bright scarlet flowers, and oak-like foliage. A discovery of Mr. Wallis in the Amazon valley.

Phrynium (Maranta) majesticum, Lind.—This species was discovered by M. Linden's collector, Mr. G. Wallis, on the banks of the Upper Purus river, one of the great affluents of the Amazon. The leaves, striped like those of Maranta regalis, are of a dark purple below, and reach the length of 2½ feet. The great effect produced by this really ornamental plant, deserves the specific denomination

The *Botanical Magazine* figures the following:

Renanthera Lowii (Mr. Low's Renanthera).—Native of Borneo. This gigantic Orchid has the unique peculiarity of producing "two entirely distinct forms of flower on the same spike." The lowest pair of flowers in each spike are uniformly tawney yellow, dotted with crimson; the remainder are pale green, blotched with reddish brown.

Masdevallia civilis (Tufted Masdevallia).—Native of Peru. Stems grow in a tuft with, at the base, yellow flowers, spotted internally with purple.

Aquilegia cœrulea (Long-spurred Californian Columbine).—Native of the Rocky Mountains, California. Calyx blue, corolla white.

Mimulus luteus *var.* cuprea (Copper-colored Yellow Monkey-flower).—Introduced by Messrs. Veitch from the Chilian Andes.

Vitus macropus (Gouty-stemmed Vine).—Native of South Benguela.

Nolana lanceolata.—It is a native of Chili, and is one of the prettiest annuals, with trailing branches, bearing a profusion of large blue Convolvulus-like blooms of the most lovely tint, the throat being white, giving the flower a very striking appearance; it is quite distinct and very much larger than N. paradoxa, which belongs to the same section.

Sir W. Hooker, in the *Botanical Magazine*, says: "This charming, and as yet little known Annual promises to be a great acquisition to our parterres in summer. It is a compact growing plant, and its large brilliant blue flowers (a color so valuable in our flower borders) with a clear distinct white eye, are both numerous and striking."

New Annuals.— *Clarkia integripetala flore-pleno.*—This magnificent double variety is by far the finest of its genus; the bloom is very double, large, of a rich magenta color, and produced in the greatest profusion; we anticipate that this will supersede entirely every other variety of Clarkia in cultivation, as soon as its merits have been observed.

Nasturtium King of Tom Thumbs.—This variety is by far the finest of all; the lustrous blue-green foliage, contrasting vividly with the intense scarlet of the blossoms, produces an unequalled blaze of brilliance.

Nemophila maculata purpurea.—An extremely pretty variety of this well-known tribe, the old variety of which is generally considered the handsomest of its tribe; color, purple, with a dark violet blotch at the apex of each petal; altogether a very novel and desirable acquisition.

Godetia Lindleyana flore-pleno. — A novelty among this much admired profuse blooming class of plants. We are not aware that, previous to the variety now under notice, there has ever been seen any thing approaching to a double flower among the Godetias; its color, like that of its parent, G. Lindleyana, is a rich rosy purple, the blossoms are perfectly double, and produced in the greatest profusion.

Whitlavia grandiflora alba.—Since the introduction of the purple Whitlavia some ten years ago, it has speedily risen into favor, and has now become a leading favorite among annuals; it possesses all the merits of its predecessors, with the additional value of being pure white in color. It must necessarily rank in the first class of Californian annuals, and we strongly recommend it as one of the best novelties ever introduced.

Chrysanthemum tricolor Dunnetti, fl. pl.—This charming flower has been produced by the most careful and assiduous cultivation, from the Chrysanthemum tricolor. Its color is snow white, and

its charm consists in its immense superiority over the other varieties, in being perfectly double, even as the Truffaut's Pæony Aster, and blooming at a time (June to August) when the Asters show foliage only; to all admirers of the Annual Chrysanthemum, this variety affords another convincing proof of the great results that may be obtained by judicious selection and careful growth.

Perpetual-flowering Pansies are among the latest novelties in England.

The *Floral Magazine* figures the following:

Achimenes Rollisonii.—It is a cross between A. gloxiniflora, and A. Shearii, raised by Messrs. Rollisson, Tooting Nursery. Color purplish lavender, throat yellow spotted with purplish crimson.

Iresine Herbstii.—Introduced by Mr. Herbst from Brazil. It is from 12 to 18 inches high. Stem and branches a beautiful, almost transparent carmine, leaves purplish crimson underneath, dark maroon on upper side, with its numerous ribs carmine.

"The plant coming both from Peru and the River Platte, will no doubt stand our climate better than the Coleus, and I may add, that in my nursery ground, in close vicinity to and almost on a level with the Thames, open to all winds and weathers, without trees or protecting walls, it stood uninjured the slight frost which occurred in August last, while the leaves of Coleus Verschaffeltii were entirely spoiled, and those of C. nigricans dropped off. I am persuaded that the Iresine will maintain a first place in every collection where plants are grown for decorative purposes, and I am informed that it will be largely planted next season in some of the most celebrated metropolitan gardens."

Rhododendron Princess Helena.—Raised by Messrs. Veitch & Son, Chelsea, from R. jasminiflorum, crossed by a scarlet species imported by them, but not sent out. Tubes of flowers very long, and the whole a delicate pink.

Ligularia (Farfugium) Kœmpferi argentea.—This most striking variegated hardy herbaceous plant was sent from Japan, by Mr. J. G. Veitch. In habit it is very similar to the F. grande, but far surpassing that species in its distinct and regular variegation. Its foliage is of a dark green color, largely blotched with white.

Ligustrum glabrum aureo variegatum.—A distinct evergreen species of Japanese Privet. Its foliage is 2 to 2½ inches long, by 1½ inches broad, of a bright glossy green color, beautifully blotched and marbled with rich yellow. In habit it is free and bushy, and can be recommended as one of the most beautiful of Japanese variegated plants.

Domestic Intelligence.

How Every Man may Raise his own Peaches.—To raise my own peaches I proceed as follows: I commence by digging the earth away from one side of the tree, at the distance of about 12 or 15 inches, deep enough to sever all the roots that interfere with my object. Running the spade also under the tree, so as to cut all the roots that descend vertically, the tree is in a condition to be bent over on one side and laid flat on the ground. Several of the stronger lateral roots on that side are not cut at all, but only curved upward somewhat as the tree reaches the ground. This does not injure them. The branches of the tree being brought as close to the earth as possible, they are still further flattened down by laying an old post or some similar weight upon them, care being used not to break the limbs. The object is to get the top of the tree pretty close to the surface. A mound of earth is then raised over the upturned roots, so as to prevent their freezing in the open air, and the fruit-bearing wood is covered lightly with some kind of litter, enough to conceal them mostly, but not so heavily as to furnish a harbor for mice. I use my old tomato or cucumber vines, potato tops, asparagus stalks, or any thing of that kind. My trees are now ready to be covered with snow as soon as winter sets in, which I keep piled over the whole top of the tree from six inches to a foot in depth. This is is all that is required. The whole process may be described under the title of *burying your trees in the snow.* Keep the snow on all winter, until it goes off in the spring, and your fruit buds will come out as fresh and lively as they were when laid down at first.

In the fore part of April, or after the buds begin to show signs of starting, set your trees up again by clearing out the space on which they stand, so that the shortened roots will go back naturally to their proper positions, and can be secured there by pressing the earth in around them, or throwing up an extra quantity around the base of the trunk. Trees thus treated will exhibit no signs of injury, but will grow as vigorously during the summer as though their roots had not been disturbed; I think

however, the operation is a somewhat dwarfing one, but the health of the tree is not in the least affected.

To grow peaches in this way, I shall depend mostly upon young and small trees. When they get to be old and stiff it may be better to throw them out altogether and replant. As far as is practicable, the tree should be forced into a fan-shaped form. This brings the branches closer to the ground for covering. My old trees are now ten feet high, and measure ten or twelve through the branches at the widest. Instead of having a spindling growth from the ends of the limbs, they grow quite bushy, and have new wood within three or four feet of the surface. Trees set in the spring of 1863 have many hundreds of blossom buds on them, and may bear a peck of fruit. Trees set last spring have many blossom buds, and will produce as much fruit as it will be safe to allow the trees to bear.

I have tested this method two years in succession successfully, with complete success this last season. I tried several other experiments, which all failed, until in the fall of 1862 I bethought myself of this plan.—*Country Gentleman.*

Hedges of Osage Orange in New Jersey.—Mr. Quinn remarked at a recent meet of the New York Farmers' Club: "I never was more gratified in my life than by a recent visit to the farm of Mr. Bell, in Monmouth county, N. J., in seeing his hedges of Osage Orange. He has his farm completely fenced with these hedges, from two to eight years old. All that are five years old and upward are completely impassable by man, beast, or bird. I was very much surprised at their success."

New Substitute for Cotton.—The Paris correspondent of the New York *Times* writes:

"Great excitement prevails in those manufacturing districts of France where cotton is most used, on account of the discovery of a substitute for the now dethroned king. This substitute is the China grass or white *urtica* (Nettle-weed), which may be cultivated cheaply in all parts of France. The experiments with this new textile fibre have been going on for a year or more under the direction of a competent Committee, appointed by the Chamber of Commerce of Rouen; and this Committee, with the weed, the raw fibre, and various specimens of woven and colored and uncolored cloths in hand, have shown the Chamber, beyond all question, that the substitute is a genuine one in every point. They declare, without reservation, that none of the qualities of the cotton are wanting. I commend to your attention the lengthy report as published in two late numbers of the *Moniteur.* The Minister of the Interior is furnishing seed, obtained from China, to agriculturists, and the speculation is going to assume at once colossal proportions.

[We do not anticipate substitutes for cotton will be permanently popular,—but as facts indicate, perhaps the American *Urticas* might be turned to good account, as they have fine and strong fibres. *U. gracilis* (tall Nettle), is a very common northern plant. This is favored by the following from the *Scientific American:*

"The Fibrous Plants.—I discovered, some two years ago, that the common Hop vine, the *Humulus lupulus*, contains in the inner bark, like the hemp, very tough fibers, which in our days of high price of cotton and rags, might be turned to useful purposes. No doubt it will answer as a good substitue for rags in the manufacture of paper. It is not so singular that this plant should possess this fiber, when we remember that it belongs to the hemp family, and I would not be surprised if, by looking among the species in the genera of the Nettle family (*Urticaceæ*), of which the above is a sub-order, we should find some more fiber-bearing plants. C. L. Lochman, Carlisle, Pa."

Wheat Turning to Chess.—A correspondent of the *Canada Farmer* announces himself as a converted scoffer at the transmutation theory, and says:

"An idea which I at first ridiculed as being not only absurd but impossible, not then believing that Nature in her seemingly uniform laws of production would indulge in such freaks as changing one variety of grain into another. Facts, however, accumulated so fast to sustain the farmers in their belief, and against myself, that in reflecting upon the subject it occurred to me to try an experiment, and see if wheat, uncultivated, would reproduce itself; if not, would it produce chess? and for this purpose I selected my seed with the greatest care from a sheaf of wheat, cutting off each ear separately and rubbing it out. I then repaired to my woodland, chose a clean spot, somewhat shady; raked off the leaves; sowed my wheat—a piece about twenty feet square—covered it with fine brush to keep off the birds; fenced it securely, and watched it closely, and had the satisfaction to see that it vegetated finely, and grew as well as could be expected under the circumstances. In the spring I removed the brush, and was pleased to find that it had withstood the winter well. In due time my little field of woodland wheat ripened, and what do my readers suppose the crop was composed of? In

was entirely chess, and not an ear of wheat to be found among it!'

Foreign Intelligence.

White Perpetual Roses.—*Mademoiselle Bonnaire* (1861).—Pale flesh, nearly white, and in bud most exquisite. One of the prettiest of the class. Wood very green and thorny. A good grower. though not robust.

Virginal (1860).—Very similar to the above, although, perhaps, not quite so full, and more white, *i. e.*, with less of the flesh tint in it; flowers of fair size. Blooms exhibited by Messrs. Paul & Son and Mr. Keynes, might be even called called large.

Louise Darzins (1862).—Quite white but small. Habit of plant very dwarf, and altogether with very much of the Noisette character in it. Blooms profusely.

Mademoiselle Eugenie Verdier (1861).—Nearly white, with pale flesh centre in the style of Virginal. I have seen some very beautiful blooms of it. The habit of the plant is moderately vigorous.

Madame Alfred de Rougemont (1863).—This I saw exhibited very well early in this year. It is not pure white, but slightly shaded with rose; may prove an acquisition.

Madame Freeman (1863).—Pale flesh changing to white. I have not seen enough of this, but it seems to be delicate.

Sœur des Anges (1863).—Large, pale blush, but very much inclined to crack and come defective, so that I fear it will never be of much service.

Louise Damaizin (1864).—This I have not seen, but it is described as a virgin white.

Of these I should be contented with Mademoiselle Bonnaire, Virginal, and Madame Alfred de Rougemont.—*London Cottage Gardener.*

The English Harvest Mouse.—The Harvest mouse (*Micromys minutus*), is the smallest example of the mammalia in England, and nearly in the world "This elegant little creature is so tiny that when full grown, it weighs scarcely more than the sixth of an ounce,—whereas the ordinary mouse weighs almost an entire ounce. Its color is of a very warm brown above, almost amounting to chestnut, and below it is pure white, the line of demarcation being strongly defined. The genuine Harvest mouse can be distinguished by its very small size and the bright ruddy hue of the back, and the white of the abdomen. Moreover, its ears are shorter in proportion than those of the ordinary mouse, the head is larger and more slender, and the eyes are not so projecting. The Harvest mouse surpasses all its congeners in the beauty and elegance of its home, which is not only constructed with remarkable neatness, but is suspended above the ground in such a manner as to entitle it to the name of a true pensile nest. Generally it is hung to several stout grass stems; sometimes it is fastened to wheat straws; and in one case, mentioned by Gilbert White, it was suspended from the head of a thistle. It is a very beautiful structure, being made of very narrow grasses, and woven so carefully as to form a hollow globe, rather larger than a cricket ball, and very nearly as round. How this little creature contrives to form so complicated an object as a hollow sphere with thin walls, is a problem. It is another problem how the young are placed in it, and another how they are fed. The walls are so thin that an object inside the nest can be easily seen from any part of the exterior; there is no opening whatever, and when the young are in the nest they are packed so tightly that their bodies press against the wall in every direction. As there is no defined opening, and as the walls are so loosely woven, it is probable that the mother is able to push her way between the meshes, and so to arrange or feed her young."

Ceratopetalum gummiferum.—This is one of the handsomest small trees in the world, which blossoms more profusely than the Lilac, and the flowers of which are of a lovely rose-red color. It is native of New Zealand.

Propgating the Mistletoe.—In respect to this, the sowing of the Mistletoe seed in a slit made in the bark of the plant, or merely on the surface of the bark, without the slit,—both ways are equally good, for it is not where the seed is placed, that the Mistletoe plant takes hold. A much more curious thing occurs at the germination of the seed of a Mistletoe. Sometimes there is only one germ in the Mistletoe seed; in others there are two, three, four, or more germs, and each germ throws up a sucker on the end of a short stalk. The suckers then lay hold of the bark of the tree, and holds on to it for six, or eight, or more months, according to the time of the year; but it is from this sucker that roots penetrate the bark, and not from where the germination of the seed took place lower down. When there are more embryos than one in the one seed, there are as many seedlings from one seed as there are germs; for each germ or embryo has its own branch and sucker, and each sucker takes an independent hold for itself, and on the place it holds to a seedling plant is established. I have seen three good plants thus from one seed, and each of them was half an inch in advance of the seed itself. —*Cottage Gardener.*

History of Cotton—*By Major Trevor Clarke.* —The Cotton plant is a vast and difficult subject; its cultivation at home or abroad is yet a problem; its history and commercial statistics voluminous; its botany impossible.

My present difficulty is simply this: how to say a very great deal in a very short space of time. To describe the various sorts, that is seminal or climatic varieties, with their ever varying forms and their apparently great but really invalid points of difference, would be taking up your time to no present purpose; suffice it to say, they are as numerous as the kinds of Wheat in our corn fields, or Peas in our kitchen gardens. In India especially, every great geographic division, seaboard, central or peninsular; every district, nay, almost every mountain or valley, cultivates its own form or variety. Could all this be told in a few columns? For the same reason I am obliged to omit the history, rise, and progress of the trade and manufacture of the raw material.

Unwillingly I pass by the lives and labors of those gifted men who, starting from the simple distaff and wheel, and the rude handloom of the cottage weaver, invented and improved, modelled and remodelled, the long series of mechanical contrivances, of which the crowning result was that wondrous and beautiful marvel, the self-acting Mule Jenny. It is a romance in itself, that story of the machines. It has been told, and told again, never too often, and the names of Hargreaves, Arkwright, Cartwright, and Crompton, are among the 'household words' of the country of their birth. But our business is with the plant and its produce. Let us take its early history. The history of the Cotton plant is old: so old that no man may tell when or where it was—in the dim Cyclopean times, ages, incomprehensible ages ago—that the thoughtful observer first saw and plucked that fair and fleecy treasure from the tree—the 'wool-tree,' from which he might clothe himself without bloodshed, and which stood before him, as if planted by the hand of the Creator for the comfort of his creatures. Did he dream that those silver threads—and who shall view them through the optician's achromatic glass and say that they belie the designation?—did he dream that the silvery fibres of the pretty Cotton pod would be changed into gold by the magic of time, to the golden fleece half worshipped by a busy world. Perhaps it was a woman. It was—it must have been. I see her even now—the little Asiatic form, glowing in deep sun tints and instinct with life and beauty. She seems lost in admiration of some object before. It is a little shrub of rare beauty; she plucks the fair blossom, cinque-spotted purple in its golden chalice, and weaves it in her crisped hair: then the ripe fruit pod, with its white and downy flocks of spotless purity. Now she plays with it—she pulls it from hand to hand, and while lost in thought unconsciously twists it into a thread—the first thread ever twined by human fingers.

Certain it is that the Hindoo women 2000 years ago produced threads and wove muslins only very lately surpassed by the power loom and Mule Jenny. Spinning Jenny! still female.

The thread of my story has led me to the East. Let us follow the clue. To the well preserved literature of ancient India we owe the fact that Cotton was well known and manufactured 800 years before the Christian era. In the book of the Institutes of Menu, perhaps the oldest law books in existence, occurs the following passage. "Let a weaver who has received ten palas of cotton wool give them back increased of eleven by the rice water and the like used in weaving; he who does otherwise shall pay a fine of 12 panas." So that sizing, and the abuse of it is nothing new. Arrian mentions Cotton as an article of import into Rome, from India, and describes the means of transit, the principal marts, and the commerce in general. But it appears to have been costly, and only used sparingly by the higher classes, who stuck to the toga; and it is on record that Horace's father had no pocket handkerchief, Cotton or otherwise. The Greeks were as perfectly acquainted with Dacca muslins as we are.

Nearchus describes the Indians as having garments of 'tree-wool' which reached to the middle of the leg, a sheet folded about the shoulders, and a turban round the head. One would think it was but yesterday, the description is so perfectly that of the modern Mussulman in his outer man. Long before this, Herodotus, a young Greek nobleman, travelling in India for pleasure and information, speaks thus:—"The trees of the field there bear wool as fruit, in beauty and quality surpassing that of sheep, and Indians use clothing from these trees." He came home, and as was the custom in

that classic and sporting land, recited his observations which were accurate, and his priest-imparted stories which were 'crammers' at the Olympic Games. Fancy Lord Dufferin or Sir Gardner Wilkinson reading their experiences of Greece and Egypt at Tottenham Corner! The word 'Cotton' occurs in many etymological forms, as Gotn, Kotun, and so on. Pliny first mentions it as Gossypium or Gossympium, while other old authors, and following them, the earlier botanists, use the word Xylon. But the oldest designation of the manufactured article is the Sanscrit kurpassum.

Cotton as a cultivated crop, did not get into China till the 13th century, though they had long possessed the handsome red-flowered G. arboreum as a garden plant. It is curious that the Celestials, who never do any thing like anybody else, seemed to have taken a fancy to the brownish-yellow stapled sort produced principally by the Indian form called religiosum, but also by the American plant. This was imported, rather largely, at one time to make Nankin trousers for the English fashionables, having first attracted notice from its strength and durability. Seeing this, the crafty Chinaman began to dye his common white cotton yellow, and the depreciated article lost him his trade, This sort is said to be one of those held sacred by the Asiatics, and, as such, used only for the head and upper parts of the body, while the British dandy's practice was just the contrary. Undoubtedly ancient as the use of Cotton was in Egypt, I fear the mummy clothes were not made of it. This, however, was long supposed to be the case, but the matter was settled a few years ago by my friend Sir Gardner Wilkinson, who pronounced it to be linen, and the microscope, in the able hands of Thompson and Bauer, confirmed his decision.

(To be continued.]

Fruit of Carica Papaya.—The Papaw is largely cultivated in most tropical countries, its fruit is, we believe, seldom eaten raw. When ripe, it is occasionally eaten with pepper and sugar, and is thought agreeable by some persons; but usually it is made into a sauce or preserved in sugar, and the unripe fruit is either pickled, or boiled and eaten like turnips. Thus cooked, it is esteemed by some persons, but it has little to recommend it. The chief value of the Papaw fruit is, that in an unripe state its juice is a most powerful vermifuge: and it is worthy of remark, that a constituent of this juice is fibrine, a principle formerly supposed to be peculiar to the animal kingdom and to fungi. The tree, moreover, as well as its acrid milky juice, and an infusion of its fruit and leaves, has the singular property of rendering the toughest animal substances tender, by causing a separation of the muscular fiber.—*Gardener's Chronicle.*

Destroying Mealy Bug.—Boil a pound of strong shag tobacco in a gallon of soft water for an hour, and strain off the liquid. Dissolve a pound of gum arabic and a pound of soft soap, also a pound of flower of sulphur; the two first in warm water, and then add the sulphur, so as to form a sort of paste. Put this mixture in a tub containing ten gallons of water, heated to a temperature of 140°, mixing the whole well. Keep stirred, so as not to allow the ingredients settling, and when it has cooled to 130°, or 125° for hard-leaved plants, as Pine-apples, and 120° for plants generally, dip the plants in it for about a minute, taking care to wet all the axils of the leaves and stems. Let the plants stand until dry, and then repeat the operation. In forty-eight hours after the last dipping, syringe with water only at a temperature of 120°.—*Cot. Gardener.*

Waite's Eclipse Purple-top Yellow Hybrid Turnip.—The Eclipse is a purple-top, yellow-fleshed, and decanter-shaped variety, with a small top. It is a quickly growing turnip; can be sown much later than the Swede, will store in the best condition till the end of May, and in the opinion of many farmers who have grown it, will keep better than the Swede. It is sound in flesh, rich in flavor, and preferred by Cattle to all others.

Gladioli.—Kelway, Standish, and Paul & Son exhibited collections, in which the following were good and striking: Brenchleyensis, scarlet; Eleanor Norman, delicate pink and white; Clemence, pinked striped with crimson; Comte de Morny, cerise with white throat; Egerie, rose striped salmon; Erato, bright rose; Isoline, delicate pink; John Bull, saffron veined white; Le Poussin, red with white throat.—*Gard. Chronicle.*

New Peas in England.—*Sutton's Ringleader,* 2½ feet. This Pea is loaded with well-filled pods, which come in for gathering all at the same time. In Messrs. Suttons' trial grounds, the haulm was cleared and the land planted with another crop before the common early Peas were ready for picking.

Sutton's Long-podded Tom Thumb, 1 foot. This has all the merits of the old Tom Thumb and Beck's Gem. which are so useful for small gardens and forcing, with the greater advantage of being covered with pods twice the length of those sorts.

The Cost of New Plants.—It is something fearful to contemplate the price these plants cost. I do not mean the guinea and a half you gave for that new Medinilla, nor even the $20 you gave for that splendid mass of a new orchid; no, I mean the price in men's lives. It is worth while to think, as for the first time you contemplate a plant which has just gained the gold medal, what the man had to go through who sent it home to increase your pleasure and mine. He stood face to face with death for months—for years, perhaps; with death in all its most terrible forms. He could, it may be, count his attacks of fever by the score, like Livingstone, and calmly write home to his friends that he was just recovering from his forty-eighth attack. He may have been in peril from wild beasts of all descriptions, and dependent for the supply of his daily wants upon natives, scarcely, if at all, less ferocious than the wild animals. His home was a hut built with a few branches in the depths of a primeval forest; or he swung his hammock between two trees, and slept there, with the sky for the only roof that covered him. What he found to live upon we had better not inquire. One collector told me he was obliged for weeks to strain every drop of water he drank through the only fragment of a shirt he had left. You may safely set these men down as 'total abstainers,' if you expand the meaning of the term so as to include not only those who drink no intoxicating beverage, but who also abstain totally from all the so-called comforts of life. Perhaps the greatest comfort one living in a foreign land can enjoy is to receive a letter and a newspaper from home, but Sir Rowland Hill's emissaries do not traverse the districts into which the botanical collector has to penetrate, and so even this pleasure is denied him. Very many botanical collectors have died far away from any civilized spot; a long list of these victims could be given, their only monument being the plants which they have introduced.—*Hibberd's Gardener's Magazine.*

Hedera Algeriensis.—Probably one of the many varieties of H. helix, but for the present classed as a species. It is remarkably distinct and handsome, and has no equal among hardy ivies for the freshness and sparkle of its foliage, which is of a comparatively light tint of green. The leaves are large, almost angular, distinctly three-lobed, highly varnished, and of firm texture. The habit is robust, and the growth rapid. It is a fine ivy for walls, and especially for the pillars of porticoes and other places where a very distinct and lively climber would be seen to full advantage.

Dwarf Apples in England.—A plantation of bush apple trees ought to be remunerative, and Mr. River's instances his own plot of 100 trees of Cox's Orange Pippin, planted in the spring of 1862, which bore a fine crop of most beautiful fruit in 1863, and an almost over-abundant one in the present year. These trees, which are on the Paradise stock, "will this season, the third of their growth in their present quarters, and the fourth of their age, give an average of a quarter of a peck from each tree, so that we might have from 4840 trees, growing on one acre of ground, 302 bushels of fine apples, which even this abundant season would be (if Cox's Orange) worth 5*s.* per bushel, or 75*l.* In 1866, the trees, then averaging half a peck each, would double this sum, and make an acre of Apple trees a very agreeable and eligible investment." And that his readers may feel satisfied he is not theorizing, but deducing facts from a sound basis, Mr. Rivers points out that besides his plantation of Cox's Orange Pippin, he has another consisting of 400 bush trees trees, which has been in existence for upwards of 10 years, so that he may be accredited with ample experience of the subject. —*Gardener's Chronicle.*

Breaking Ground for a Railroad.—An English paper thus describes the ceremony:

"On arriving at the spot where the first sod had been already marked out, Lady Palmerston, lifting it upon a silver spade, deposited it in a light wheelbarrow, ornamented tastefully with silver, and bearing an inscription stating it to be the gift of Mr. T. R. Crompton, the contractor to the line. Her ladyship took up the wheelbarrow and propelled it steadily to the end of a long plank, amid the warm applause of the spectators. Having accomplished her task, Lady Palmerston said:

'I thank you very kindly for the flattering manner in which you have received me to-day, and I trust that the works now commenced will be found useful, and for the advantage of Northampton and the neighborhood.'

The three cheers given for Lady Palmerston, were promptly followed by three others for the noble lord himself. Lord Palmerston, in returning thanks, expressed the great pleasure which he and Lady Palmerston felt in presiding at the commencement of work which promised to be of so beneficial a character. Irrespective of other considerations, it was, he said, a good social example for ladies in a high position to show that they could sometimes take to digging the soil. He trusted that the crop in this instance would be more permanent and more solid in its yield than agricultural operations occasionally were."

Flowering of Seedling Hollyhocks.—At the last meeting of the Royal Horticultural Society's Floral Committee, Mr. Tillery, of Welbeck invited attention to a property in the Hollyhock, which, if known to the initiated, does not appear to be commonly known or practiced among cultivators generally. It is, that seedlings may be had to bloom satisfactorily the same year they are sown. Mr. Tillery's communication was accompanied by some remarkably fine-grown flowers, admirable subjects for garden decoration, in illustration of the treatment which he recommends to those who have not convenience for wintering a supply of plants. These flowers were, in fact, sent to show that the seeds of Hollyhocks sown in February, will yield vigorous flowering plants the following September—a great desideratum in filling up shrubberies with masses of these gorgeous autumnal flowers, for which purpose, of course, seedlings of a 'good strain,' as the florist's say, are exceedingly well adapted. It was explained, that in the case in question, the seeds were sown in a Peach-house in the beginning of February. The seedlings were planted singly in small pots, and kept growing in heat till the beginning of April, when they were planted out, some in well-prepared garden soil, others in masses in the shrubberies. All have flowered, or are coming into flower. It is well known, Mr. Tillery observes, that severe or wet winters cause the Hollyhock to rot, when not protected by frames; but by raising them from seeds every year, a supply can be kept with little trouble. It is also well known that certain kinds of Hollyhocks may be reproduced almost true to color and properties when raised from seeds, and such are of course very desirable parents to adopt when this method of treatment is carried out.—*Gardener's Chronicle.*

Grapes at the London Horticultural Society's Exhibition.—Grapes, though not shown in such abundance as we expected, were in some instances in great perfection, Mr. Meredith, as usual, taking the lead. In the class for boxes of not less than 12lbs. weight, he was first with large and beautifully-colored Black Hamburghs; Mr. A. Henderson and Mr. Wills, Oulton Park, being second with Lady Downe's in fine condition; and he was again first in the class for the best 3 bunches of Black, his Black Hamburghs being of the extraordinary weight of 11lbs. 4oz., the bunches remarkably compact and dense, and the berries finely colored. Mr. Ford was second, and Mr. Omant third with good bunches of the same kind.

In White Grapes Mr. Dwerrihouse was first with splendid bunches of a seedling variety, the berries of which had an amber tinge, and the largest bunch must have been a foot long and 8 inches across at the shoulders. Mr. Budd, Cobham Hall, was second with well-colored Muscats; and Mr. Wills third with Trebbiano.

For the largest bunch of any kind, Mr. Meredith was again first with Child of Hale, noticed some time ago in our Fruit Committee Reports. This was a magnificent bunch of 8½lbs. Mr. Dwerrihouse was second with his seedling, weighing nearly 5lbs., and Messrs. Lane & Son third with Muscat Hamburgh, 2lbs. 3oz. Marchioness of Hastings from Mr. Henderson weighed 4lbs. 4oz., but not ripe.

Cuba Bast.—This not the bark of the Lime tree, but of a West Indian tree, called *Partitium clatum.*

Theory of Color in Leaves.—The varied and gorgeous tints which leaves assume on the approach of autumn, are due to the absorption of oxygen gas: those leaves which remain longest green absorbing least oxygen. Some species of the Maple, the Poplar, and the Beech, are remarkable for the rapidity with which their leaves change color; these, it has been demonstrated, will absorb eight or nine times their bulk of oxygen in the same time that the Portugal Laurel or the common Holly will absorb the smallest fractional amount. If several green leaves of the Poplar, the Beech, the Holly and the Portugal Laurel are placed under the receiver of an air-pump and dried thoroughly, keeping them from action of the light; when dried let them be taken out and moistened with water, and immediately placed under a glass globe filled with oxygen gas; it will be found that the several leaves change color in exact proportion to their powers of absorbing oxygen, the best absorbers changing color most rapidly. The result of this absorption is the formation of an acid, and this acid changes the chlorophyllite, or green principle, from yellow, and then to a reddish hue. A similar change is effected in the color of the leaves of plants by merely treating them with an acid; and, if a red leaf is macerated in an alkali (potash for example) it becomes green. We thus have another proof that chlorophyllite owes its formation to the absorption and decomposition of carbonic acid by the plant under the influence of light; for, if this agent be withdrawn, no absorption takes place; on the contrary, a continual disengagement of carbonic acid gas from the tissues of the plant is the result. —*London Cottage Gardener.*

The First English Book on Gardening was published in 1594, by one Mountain, and called the "Gardener's Labrynth." Then came "Gerarde's Herball," published in 1597.

Horticultural Notices.

PENN'A. HORTICULTURAL SOCIETY.

DISCUSSIONAL MEETING, OCT. 4TH, 1864.

The President, Fairman Rogers, in the chair.

Mr. E. C. Hibbert presented an Essay on

"THE DESTRUCTION OF INSECTS IN PLANT-HOUSES." (*See page* 5.)

Mr. Walter Elder said while he was employed in one of the most extensive plant-house establishments in Europe, a new insect, called the *Ringer*, made its appearance, which was very destructive to Camellias in winter. It resembled a Wire-worm, and wound itself around the roots of the plants like a ring, and eat off the bark. In the summer it was a small black click, very nimble, and eat the leaves off the Camellias during the night,—but never to be seen in daylight. The process we adopted to rid ourselves of them was: Large numbers of the Camellias were repotted in winter, the Ringers killed, and the soil burned; and during the summer, several of persons went through the house at night, one carrying a glass lantern, while the other caught the insects, putting them in vials. Although during the first year they were very numerous, I believe by the third year they were exterminated, as I have met many gardeners who have since been employed at that place, but not one of them ever heard of the *Ringer.*

Mr. Elder also paid a high compliment to the Essayist of the evening, whom, he said, had known many years, and whose skill he had often had opportunities of observing, was of a high order.

The Chairman inquired as to the experience of members in the destruction of snails.

Mr. Hibbert—Had very good success with dry mahogany sawdust; if wet, it does not answer. Had also used salt and sea-sand, without favorable results. Ants are very troublesome in many greenhouses. Mr. Sutherland, late gardener to Mr. Fahnestock, states that the ants carry and deposit the eggs of the white scale all over the plants. The leaves of plants infested with white scale, are covered with a coating of some sweet substance, which is very attractive to ants. The thrip has been quite troublesome this year; would like to know of some remedy.

Mr. Harrison—Last year Mr. Saunders reported favorably of a decoction of Quassia, recommended by Mr. Buist for some other insect, I think the Red Spider.

Mr. Eadie—Tried the Quassia, and failed entirely. The rust on the Verbenas is getting very prevalent. Does not agree with Mr. Henderson, who considers it a fungus. It is undoubtedly caused by an insect; it can be readily discovered with a strong microscope. Three or four years since Achimenes were affected by it, and next Gloxinias; now Verbenas and Heliotropes are badly infested by it. In England it has appeared occasionally for the last 30 years. Tobacco water is the only remedy yet discovered, fumigation will not answer. The insect is about 1-16 of an inch long, of a dull white color, and very nimble. Snails, in Europe, are destroyed by toads, introduced into greenhouses for the purpose, as well as for the destruction of wood lice. In this country snakes are sometimes employed instead. In Dr. Rush's houses, has caught the snails at night, and thus cleared them out effectually. Also syringed at night: the moisture attracts the snails. Ants are induced by snails, on which they feed. The green fly is easily destroyed by means of tobacco-smoke or fumigation. The latter is also the best destructive of the troublesome thrip.

Mr. Hibbert—The first and second year of its appearance in Dr. Rush's houses, the rust attacked the Achimenes and and Gloxinias; next the Verbenas became infected. It appears like fine snuff dusted on the leaves. Mr. Eadie had proved to him that it was caused by an insect. Some attributed it to a sudden change of air. Tried Achimenes and Gloxinias out of doors, but they soon got covered with it. As a remedy, tried successively hot-water, tobacco-water, whale-oil soap, and fumigation under, a barrel with scotch snuff and sulphur, all to no purpose. Last year had great trouble with the thrip, but this year none, nor any mealy bug, except the kind which attacks Rhododendrons and Azaleas; these he has not been able to destroy.

Mr. Harrison—In the extensive vineyards of Mr. Grider, of Bethlehem, the thrip is destroyed at night, by means of torches passed rapidly along under the vines, while an attendant shakes the insects from the leaves into the flames.

Mr. O'Keefe—My orchids, in the houses of Mr. Joseph Harrison, are entirely free from snails, which I attribute to the material I use in potting, which is very dry sphagnum.

Mr. Eadie—I think the rust on Verbenas, etc.,

is the juice exuding from the sting or puncture of the insect spoken of. Its color partakes somewhat of that of the flower of the plant, but much darker. Mr. Stewart, a celebrated Verbena-grower of Philadelphia, does not fumigate, but uses tobacco-water, and so destroys the rust. It is more prevalent in the city than the country.

Mr. McQueen—Is not troubled with the rust, but had the thrip in his houses to an annoying extent. By means of fumigation, two or three times repeated, followed by syringing, they were entirely cleared out. Would ask if plants, which have been freely syringed with whale-oil soap and water, in a cold house, are liable to damp off.

Mr. Hibbert—Has never found this to be the case.

The Chair—Kerosene oil, made from coal tar, is said to be useful in the destruction of many kinds of insects.

Mr. Hibbert—Tried Petroleum or crude Rock oil, one table-spoonful to a pint of water, and killed the thrip but injured the plants.

Mr. O'Keefe—The rust depends very much upon the situation in which the plants are grown. Verbenas require a great deal of air. This year he ventilated freely and had no rust.

Mr. McQueen—In changing the location of Heliotropes, to avoid rust, great care should be observed not to touch the roots; if they are disturbed, then cut back the top well, otherwise the leaves will be apt to wilt. They are very sensitive of removal. They delight in a shade, and if not subject to alternations of sunlight and shadow, they have beautiful bright green foliage.

Mr. Eadie—Four or five years since, Mr. Donald Beaton, in the London *Cottage Gardener*, recommended sweet-oil as a remedy for the scale on Geraniums. Several here have tried it and killed their plants. Mr. Beaton had been severely criticised for proposing it. Vinegar has been highly commended by some.

Mr. Hibbert—Tried vinegar, quite diluted, on Geraniums, and the leaves appeared as if covered with frost. Saw the effect, at Mr. G. Blight Brown's, of the application of sal ammoniac to a young Horse-Chestnut, in solution, (a piece the size of a pea dissolved in a common watering-pot of water). The foliage was very luxuriant and beautiful, and the growth remarkable. A double dose killed the tree.

Mr. McQueen—Has found a perfect remedy for the Red spider, in white-washing the flue of the house, commencing about 10 feet from the flue, with a mixture of two parts lime and one of sulphur, in water. It is a sure cure for that insect.

NATIONAL POMOLOGICAL SOCIETY.

Tenth Biennial Session held at Rochester, New York, 13th, 14th, and 15th, September, 1864.

ON APPLES.

The *Ben Davis* was referred to by Nelson, Bateham, Barry, Warder, Edwards and Beeler. All in its favor. Warder and Bateham deeming it only of second quality, though a profitable market fruit.

New York Pippin was voted a synonym.

Batchelor's Blush, like Maiden's Blush, yellowish and better. Mr. Parry said J. J. Thomas thought it scarcely distinct enough.

Princely, *Genii*, and *Lippincott's Sweet*, members thought good.

Cogswell and *O. Nonpariel*, pronounced distinct.

Grime's Golden Pippin, native of Virginia; season January to April; praised by Marshall and Beeler for vigor and hardiness.

Nelson, Harkins, Sangwell, Bateham, Barry, Ellwanger, Beeler, J. J. Thomas, Maxwell, and Sylvester, spoke of the *King of Tompkins County*; fruit dropped badly; bears much less than Baldwin; long coming into bearing,—bears full crops every other year; but fruit so good that it brings very high prices.

Downing praised *Magnum Bonum*; ripe here in January,—in Georgia, September.

Hoadley, Edwards, Muir and Warder spoke of *Milam*. Praised as a cooking apple.

Blair is a synonym.

Westfield Seek-no-further—eight members praised it highly. Mr. Paul of Mass., thought it there only a fair 'frying apple.'

Ridge Pippin, thought fine for New Jersey, by Parry.

Wagner, does well in Massachusetts, Pennsylvania, Indiana, and New Jersey.

Klaproth, fine and beautiful, by Downing.

Rediman, praised by Downing. *Cornell's Fancy*, by Noble. *Jefferis*, by Downing,—not by Hoopes and Hooker. *Evening Party*, by Downing and Nelson. *Northern Spy* was considerably discussed, favorably in general; but objected to on the score of so long coming into bearing. *Cooper's Redling*, praised by Noble. *Monmouth Pippin*, by Parry. *Ribston Pippin*, splendid in a cool climate: indifferent in most parts of the Union.

Dr. Trimble lectured instructively on insects: *Apple Moth* and *Curculio*, the chief fruit enemies. The hairy Woodpecker an excellent hunter of Apple-moth larva. The moth is perfect end of June and beginning of July. The eggs are hatched in the fruit; before fall they come out and hide for the winter, under the cracks of old bark. Smooth bark recommended. Hay rope coiled around the tree entices them to be captured.

The Curculio does not leave the fruit till it falls; so they may be destroyed by gathering the fallen fruit. He had captured seven hundred Curculio from a barrel of apples. Dry weather is very destructive to insects in a state of transformation.

The election of officers followed here:—*President*, M. P. Wilder, of Mass. *Vice-President in chief*, Dr. Warder, of Ohio. *Vice-Presidents*, Dr. Edwards, of Missouri, D. D. Wier, of Illinois, W. C. Flagg, of Illinois, W. Muir, of Missouri.

GRAPES.

Union Village—Moody, Downing, and Saunders, thought it inferior. Decided by the Society that *Ontario* was a synonym.

Rebecca—Hovey, Brocksbank, Townsend, Paul, of Mass., Hoag, of N. Y., Knox, of Pa., spoke unreservedly in its praise; Field, Bergen, Carpenter, Hooker, and Mead, of New York, thought it tender and a somewhat shy bearer.

Maxatawney—Noble and Hoopes, of Pa.; Parry, of N. J.; Campbell, of Ohio; and Price, of Pa., spoke of it as better than Rebecca in every way, but a little later. Mead and Downing said so late they could not ripen it. Saunders said in Washington it was ripe with the Delaware; and Price, at Media, Pa., ripe with Diana.

Isabella—Several members said this grape varied so in many localities, that many thought they had new varieties, and named them accordingly.

ToKalon—Knox, Merceron, Mead, Langworthy, Harkins, Grant, Hoopes, all thought it unreliable.

Lydia—Mead and Campbell thought it a better grower and equal in quality to the Rebecca.

Allen's Hybrid—Mead, Prosser, of Yates Co., N. Y.; and Serril, of N. Y., thought it too tender, and mildewed too badly. Hovey, Downing, Hoag and Grant praised it without reserve, as one of the best of grapes in every respect.

Miles—Downing and Bergen spoke of it as the earliest and best. Hoopes had fruited it 8 years; ripened last of August.

Cuyahoga was thought too late. *Ives' Madeira*, Warder says makes good red wine.

The Committee on Grapes reported that they did not see the purpose of their special appointment, when a committee on all the fruits had already been appointed; however, they reported the *Iona* as ripening about the same time as the Delaware, and an excellent grape. The *Israella*, ripening it is supposed before the Hartford, sweet, tender and good. A seedling, said to be from the Traminer, promising. *Moore's Hybrid*, not ripe. Other seedlings unworthy of note. *Yeddo* not ripe; sweet, and promising.

St. Louis was decided on for the next meeting.

The *Isabella* was reduced from the list for general to special cultivation.

Adirondac—Pullen, Thurlow and Whilick, of Vt., found it earlier than H. Prolific, Concord and Delaware.

Hartford Prolific—Field and Knox prized it as an early grape; Hooker objected to its berries falling.

Concord—Bergen did not prize the Concord above all; Knox, Saunders, Edwards and Kelsey, spoke highly of it; Field said he preferred the Delaware, but nine-tenths of his visitors voted for Concord.

The order of ripening in grapes many members thought varied in different seasons.

Inquiries were made for the *Iona*, but the only members who knew any thing of it seemed to be Downing and Mead, except the raiser, Dr. Grant. He said he did not know what it was raised from. It bore first in 1857. It was well ripe by first of September. Would dry to raisins. The Delaware mildews with him; the Iona does not. Mead had fruited it in 1858, and every year since. Spoke of it as a good grape; thought there might be a difference of opinion as to the degree of its goodness. Downing had fruited it three years; promised well in all respects.

Israella—No one spoke of this but the raiser, Dr. Grant, who thought it was the earliest grape he had ever grown.

Diana—Knox and Grant praised it highly; Best said it did well in Michigan; Arnold, of Canada, Field and Langworthy, of N. Y., found it bear poorly.

Moore's Hybrid was exhibited, and received favorably by the meeting.

Roger's Hybrid—Campbell thought them true hybrids: No. 3 best, No. 4 next best, No. 9 next. J. J. Thomas: No. 9 larger, earlier and better than Diana, with a Catawba flavor. Bergen, of N. Y., thought only No. 5 very good in flavor, No. 44 earliest; most of them very prolific; has only fruited them one year. Campbell thought No. 3 the hardiest, Nos. 1, 15, 19, somewhat injured without protection; No. 4 he considers a better grape than Concord. Barry thought Mr. Roger's had unintentionally been led into error about their being hybrids. He did not believe they were.

Moore, of N. Y., said the leaves, habit, and fruit of No. 4 were like a Black Hamburg. This Campbell confirmed, remarking that it required comparison to be sure of which was which. Hoag, of N. Y., said No. 33 was so tender it killed to the ground. None ripened well with him. The society resolved to instruct the Fruit Committee to give names to three best, in co-operation with Mr. Roger's before next meeting.

PEARS.

Doyenne du Comice—Hovey, unexceptionable; better than Doyenne Boussock; ripe last of November. Mead and Downing agreed with Hovey.

Des Tongres—Hovey, carefully cultivated it is a valuable pear. Smith, of Syracuse, would not heartily recommend it. Houghton, of Pa., tender and poor grower. Downing, does better standard than dwarf. Field, on his sandy soil, it was a superior dwarf or standard. Hooker, it does well only on light soils, too acid for the general taste.

Wilmington—Mead, first-rate.

Sheldon—Many members, from all parts of the Union, all spoke in favor of this on pear; with a few it did not do well dwarf.

Beurre Clairgeau was not thought of very best quality; but in every other respect was highly praised by all.

Beurre Langelier—Hovey and Barry spoke highly of its general superior qualities, as a winter pear, but it was so long before it bore. On Quince, Thomas had a six year plant bearing full.

Bonne de Zee, character doubtful, by Field and Barry. *Doyenne d'Alencon*, Bergen, Ellwanger and Houghton, found a desirable winter pear; Field thought not. *Lawrence* and *Winter Nelis* were considered the most successful winter pears. *Columbia* had many faults found with it. *Queen of August* Downing said was some as Hosenshenk. *Steven's Genesee*, uncertain. *Andrews*, spoken highly of by all. *Beurre d'Amanlis*, Field thought nearly worthless. *Belle Lucrative*, highly spoken of; Beadle thought it had a tendency to fire blight in Canada. *Bergen*, not so good as Bartlett, but succeeds it, and is good. *Beurre Hardy*, Barry and Downing considered it very promising. *Flemish Beauty*, well spoken of, but rots early at the core in some southern localities. *Jaminette*, Ellwanger and Barry named as a good pear for transportation; Hovey thought there were newer and better ones. *Vicar of Winkfield*, every one considered the best cooking pear; but some, like Downing, "never saw one fit to eat;" others, like Field, "should eat no others when they could get these;" variable. *Dana's Hovey*, spoken well of by Mr. Hovey. *Belle Williams*, good winter pear, keeps to January, Hovey said. *Kingsessing*—Hoopes, Hovey, Parry and Hooker, all spoke highly of it as a first-class September and October pear. *Frederika Bremer*, uncertain. *Mannings Elizabeth*, praised all round for its good quality, but objection to its size; ripe before Doyenne d'Eté. *Kirtland*, condemned by all. *Marie Louise*, good "when the tree gets old." *Oswego Beurre*, many members thought of no value when it does not crack badly; Hovey found it do well when not suffered to overbear. *Muskingum*, Field says fine on pear stock. *Beurre Sapier*, Barry had fruited two years, and thought promising. Also thought well of Howell,

PEACHES.

Hale's Early, superior, and all admitted it to be ten days earlier than Troth's Early.

The discussion then turned on culture and diseases, in which nothing new was elicited.

RASPBERRIES.

Philadelphia—Parry. Found in a wood near Philadelphia, in 1838; larger and better than Purple-cane, not so early; Knox would only grow it where better kinds fail. Bergen said a kind was 'very hardy' and popular in New York twenty years ago called the 'Red Raspberry.' It subsequently got tender, and went out of cultivation. The *Brinckle's Orange*, Knox said was his favorite. *Doolittle's Black Cap* was very very popular in Pittsburgh markets.

STRAWBERRIES.

Fillmore and *Triomphe de Gand* were Mr. Knox's two favorites. In size and productiveness Batcham thought Fillmore best.

Burr's Pine, *Albany*, and Triomphe de Gand, were Best's 3 best. *French*, Parry said, was as good as Hovey, and nearly as early as Early Scarlet.

Meehan, in reply to an enquiry of Mr. Bateham, said *French's Seedling*, *Albany*, and *Triomphe de Gand*, were the most popular kinds in Philadelphia market. The *Union*, Brill said, was probably Victoria. *Brooklyn Scarlet*, praised as a good bearer, by Thurber. Barry recommended caution with new seedlings, which were usually good at first. *Bartlett* was ordered by the society to drop its name for *Boston Pine*, identical with it. *Russell's Prolific*, Bragdon and Brill both thought distinct from Russell's Prolific.

We have endeavored to give in one chapter a succint account of the proceedings. We have made this up from Mr. Bragdon's report, (which the *Rural New-Yorker* corrects us for saying was made for the society, as well as for itself), altered or added to as our recollections called for.

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

THOMAS MEEHAN, Editor.
W. G. P. BRINCKLOE, Publisher. FEBRUARY, 1865. VOL. VII.---NO. 2

Hints for February.

FLOWER-GARDEN AND PLEASURE-GROUND.

There is nothing so interesting in all spring operations as the sowing of seeds, and the watching the young germs as they sprout and push through the ground. Hence, though the hardy annuals are not by any means the best bedding plants one can have, they are extremely popular, and every body wants some. They do best when sown as early as the ground is dry and warm enough; the latter is very important, as if the ground is cold, seeds that have been kept warm and dry through winter will often rot. The ground should be so dry when the seed is sown, that it will crumble on pressure instead of becoming firmer. The seeds should be sown quite near the surface, and press firm by the back of the trowel or otherwise. In all but the border States, the time to sow will not be till March; but selections are usually made from the seed lists early, and so we refer to the matter now. Every year adds to the list of good things introduced. For the assistance of our readers, we name a few that have come under our notice, that we know to be good. There are no doubt others as good among some of the scarcer ones that we have not seen. Asters—of these there are now many sections. Among the best are the Truffaut, Victoria, and the crowned Aster. The porcupine aster is curious. The German Stocks have been very much improved of late years: most of the seedlings coming double. The Perpetual Ten-week Stocks are very showy and of varied colors,—orange and canary yellow colors of these have been raised, we believe. Double Larkspurs, Double Zinnias, Double Portulaccas, and Double Clarkias, add to the interest of these well known classes. Of miscellanies in good things we have Abronia umbellata, Acroclineum roseum, Anagallis in varieties, Bidens atro-sanguinea, Callirhoe pedata nana, C. verticellata, Campanula vidalii, Cannas in variety, Clarkia pulcherrima, Chlora grandiflora, Gilia laciniata, Gypsophylla paniculata, Helichrysum in variety, Lobelia Paxtonii, Linum grandiflorum rubrum, Lupinus albo coccineus, Petunias of the Zouave strain.

The following are quite new, and are said to be very beautiful. We are not sure all of them will be offered for sale this year, but our principal advertisers in the flower seed way, such as Buist, Dreer, Vick, Bliss, Thorburn, Bridgeman, and several others, who are very enterprising in obtaining novelties, will no doubt have many of them:

Campanula attica, Celosia cristata versicolor, Chrysanthemum atro-coccineum, C. carinatum purpureum, C. coronarium, C. album, Coleus mollis, Datura Huberiana, Delphinium cœlestinum, Godetia rosea alba, Michauxia campanulata, Phalacræa cœlestina, Reseda crystallinæa, New Mignonette, Salvia japonica, Verbena auriculæflora, Primula Parryi, Adobra viridiflora, Bryonopsis erythrocarpa, Coccinnea McKennii, Lagenaria sphœrica.

Of the ornamental grasses, the following is a selection from the less common kinds:—Androgogon giganteus, A. provincialis, Chloris truncata, Lamarkia aurea, Cinna Mexicana, Echinocloa colona, Eragrostis elegans, Erianthes Ravennæ, Fiorinia pulchella, Hordeum jubatum, Lagurus ovatus, Pennisetum fasciculatum, Poa Peruviana, Stipa filiculmis, Tricholæna Teneriffæ.

While caring for the annuals and grasses, we hope the hardy herbaceous plants will not be forgotten. Besides the merit of taking care of themselves, for they require no further care than taking up every second year or so, and replanting, they afford a varying interest with every month in the year. We give a list of six good ones, for flowering near each of the months annexed. April—Iberis sempervirens, Double Daisy, Phlox subulata,

Dicentra spectabilis, Snowdrop, the Forget-me-not or Myosotis palustris. May—Polemonium reptans, Omphalodes verna, Funkia alba, Geranium sanguineum, Fraxinellas, Aquilegia canadensis. June—Achillea tomentosa, Dodecathon Meadia, Funkia cerulea, Iris of sorts, Lychnis fulgens, Pentstemon rosea. July—Zauchneria Californica, Wahlenbergia grandiflora, Spiræa japonica, Potentilla atrosanguinea, Lychnis Chalcedonica, Campanula persicifolia alba. August—Achillea Ptarmica, Clematis revoluta, Chelone barbata, Delphinium formosum, Lythrum salicaria, Liatris spicata. September—Sedum popufolium, Double Dwarf Sunflower, Anemone japonica, the Lilies, Dracocephalum Virgineum, Asters. There are besides a great many other beautiful species, and which others might think even more beautiful than those we have named, but these will at any rate form the nucleus of a good collection.

Of ornamental shrubs, there are now full lists to select from. Of those which are beautiful and can be readily and cheaply obtained, we may name Dwarf Horse-Chestnut, flowering in June; the different Dogwoods, Cornus Florida, C. sanguinea, C. mascula, C. alba, and particularly the variegated English; the Hawthorns are very pretty when in a cool soil and situation, partially shaded from the sun in summer—there are many fine double varieties of the English which do best when grafted on American stocks: the Double White and Double Red and Pink are particularly desirable; the Laburnum is rather a strong-growing shrub, also wanting a cool soil and situation. When the season happens favorably, it is the most ornamental shrub we have. The Sea Buckthorn is very desirable for its pretty silver foliage; but it should not be set on a lawn, as it suckers somewhat. The shrubbery border is the place for it. Of the silver-leaved class the Oleasters are very desirable. The yellow is not hardy probably north of New York; but the small-leaved (*Æleagnus parvifolia*) is perfectly so; it has in addition very sweet flowers and pretty berries to recommend it. The Silver Bell or Snow-drop tree is also a large shrub; but its early white flowers give it a claim on most shrubberies, especially as it blooms quite young. The Magnolias purpurea and glauca are very desirable. The latter, as it grows in swamps when wild, is not often seen cultivated, as it is supposed it will not do in dry soil. This is a mistake. In a deep rich soil it thrives amazingly. It requires a free use of the pruning-knife on transplanting. The European Bird Cherry is one of the handsomest strong-growing shrubs of its season—June. For a single specimen on a lawn it is not to be excelled. Its habit is good, and its flowering abundant; its berries are also very enticing to birds, which form no mean addition to the pleasure of a garden. The Pyrus japonica every one knows: the white variety is desirable, though it is more pink than white. The Mist tree is indispensable, from its striking peculiarity of flowering. The White Fringe, with leaves like the lilac, and large pendant clusters of white flowers no less so. There are several Willows which, as shrubs, we would on no account be without, for their flowers large and sweet, so early that the first sun that thaws the March snow, brings them out also. The Goat Willow, and the Villars Willow—male varieties of course—are especially to be mentioned. The Indian Cherry (*Amelanchier*), following the Willow in flowering and very beautiful; and the Double Pink, and Double White Dwarf Almond, are also early and pretty. The Yellow, White and Crimson Azaleas, are magnificent, but so scarce in nurseries, we are almost afraid to have them in this list. The different Berberries can be scarcely spared for their pretty red berries in fall. The Sweet Shrub or Virginia Calycanthus, is one of the sweetest of all flowering shrubs; though its color is dull. The Bladder Senna is very desirable for its love of our summer heat, flowering profusely during July and August. The Mezereon is particularly sweet and attractive, blooming very early, but like the azalea, rather scarce in nurseries.

The Deutzias are well known,—scabra and gracilis are the two best. The Burning bushes are beautiful in the fall,—the Mississippi Purple (*atropurpurea*), and the European, are two most desirable. The Golden Bell and early Spiræas, (as prunifolia, Blumeana and Reevesii), every one wants, as well as the Wiegelia rosea. The public taste is divided on the Althea, yet there are few gardens without some one variety or other; The variegated leaved is scarce, but as desirable as any shrub grown. The Oak-leaved Hydrangea makes a very striking object in a collection; and the common garden Hydrangea indispensable for dense shade. For flowering in August, and for dwarf compact habit, Hypericum Kalmianum, or the H. prolificum, is perhaps unrivalled. A rather scarce, but particularly pretty native shrub is Itea Virginica, which, like the Magnolia glauca, a swamp plant, cultivates well in dry ground. The Jasminum nudiflorum should be trained to a stiff stake, and get a pruning with the shears twice a year; it then grows very compact, and will support itself after the stake rots away; then, it makes one of the prettiest shrubbery bushes imaginable. As an oriental looking

plant, the common Privet is good; indeed, its pure white flowers, fragrant as they are, and jet black berries, always attract attention. It is a plant that will thrive in the most gravelly soils. The Upright Honeysuckles are perhaps the most common in gardens; the Tartarian deservedly so—few things are prettier. The Fly Honeysuckle is also desirable, for though the flowers are not quite as showy as the Tartarian, the habit is more graceful. Then the Mock Oranges or Philadelphus, though all white-flowering, afford, by their diversity of habit, many good shrubs. The sweet one, (*P. coronarius*), one of the oldest and best, is least common. The Large-flowered and Gordon's Upright are the two next best. The Tree Pæonies, though rather expensive, every one wants. The Red and White Snowberry make good show in winter by their interesting fruit. As for the Lilacs, we need scarcely recommend them. Common as they are, no garden is complete without them. The Persian is a very distinct one from the common kinds. There are many new varieties, but they are but shades of old colors.

The Tamarix is not often seen, but a great favorite of ours. In the class of Viburnums the Snowball is well known; also the high bush or false Cranberry, the Black Haw and the Wayfaring tree are the best.

For a collection of desirable trees, not particularly scarce, but which could be had in most nurseries, we would select the Norway, Red, Sycamore and Sugar Maples; English Horse-Chestnut, where the soil is not too hot or dry; English White Birch; English Hornbeam, a rather small tree; Judas tree, either English or American; European Beech, also the Blood leaved variety; European Ash, including the Weeping variety and Flowering Ash (*ornus*); European Larch, and the American to make a pretty tree when mature; the Sweet Gum; Magnolia tripetala; Mimosa tree (*Julibrissin*), south of Philadelphia; Paulownia, for those who like sweet or showy flowers regardless of an ugly growth; Oriental Plane for grandeur and rapid growth; and of the Oaks, the English, Scarlet, Mossy-cup and Swamp White are the best. The deciduous Cypress, American Linden, and where the Elm-worm is not troublesome, the Am. Elm.

HOT AND GREENHOUSE.

Gesnerias, Achimenes, Gloxinias, and all bulbs that are destined to flower through the summer, should be potted now, and brought forward in whatever heat we may have at command. It is a frequent practice to put what are called Cape bulbs into any dark spot, where nothing else will grow; but this is an error. They like all the light they can get. Do not forget to sow some of the most popular kinds of annuals, so as to get them earlier in bloom than those in the open air.

Camellias, as they commence to grow, will be in a condition to shift, if they require it. As a rule, there is by far too much re-potting practiced, both in these and other plants. A plant is ususually healthiest when its pot is full of roots. There is then little danger of injury from the injudicious application of water, which is the cause of three-fourths of the diseases of pot plants. If a plant does not grow so well as it might do, through its pot being rather small, this can be in a great measure made up by the application of manure-water. After plants are repotted, they should not be watered more than can well be avoided, as the new soil is apt to sour if the water does not pass away very freely.

The above remarks apply to all hot and greenhouse plants. Repot only when growing very weak, and choose the time for that just before the plant begins to grow, whenever that may be. If a plant is not in a good shape, cut it down about three or four weeks before it is desired to pot it. Never cut down and repot at the same time if it can well be avoided.

Soft-wooded greenhouse and hothouse plants for blooming next winter, should be propagated now. The old Begonia incarnata is one of the most indispensable for this purpose. Most of the shrubby Begonias also are good. So also are the Justicia tribe, Bouvardias, Pentas, Oldenlandia Deppei, Stevias, Habrothamnus, Cestrum, Manetta bicolor, Iberis sempervirens, Laurustinus, Epiphyllums, Jasmines (the Yellow and Catalonian), Centradenias, Mahernia, Francisca, Aphelandra, Beleperone, Vinca, Thyrsacanthus, Salvia gesneriflora, S. barbata and S. Mexicana, Euphorbias, Poinsetta, Heterocentron roseum, and H. album, Streptocarpus Rhexii, Lopezia rosea, Daphne cneorum.

Orchideous plants are now growing into favor for the choicer styles of bouquets. The mass of peopeople can seldom tell whether a bouquet has choice or common flowers in its make up, and whether it is worth five cents or five dollars, it is all the same to them. But, there is no mistaking the curious orchideæ in the nosegay, and we have heard of their bringing prices this way we fear to name.

This is the season when many of them are to be repotted, or refixed on their blocks. Whenever thus disturbed, they are to be put at once into the

warmest part of the house, which, at this season, is kept at about 75°. In potting use great care not to cover the embryo buds, or they will probably rot.

The beauty of the Pelargonium is to have it dwarf and stocky, with thick-set shoots and bold healthy foliage. To our mind there is not a more beautiful object than a really well-grown Pelargonium. To be kept near the glass, to never be allowed to get dry, to be kept clear of insects, and to have a rich soil, plenty of it, and manure water occasionally, is the real secret. Calceolarias are also fine objects in good hands. They also must be kept near the glass, and manure water helps them after they have once began to grow freely. Chinese Primroses must not be over potted, unless very healthy, or they will be liable to damp away altogether. Gloxineas and Achimenes may be potted for the earliest blooming plants. Fuchsias should be cut down, and started if fine specimens are wanted; and after they have pushed a little, skaken out of their pots, the old balls reduced, and encouraged again to grow with new soil.

VEGETABLE GARDEN.

In those favored localities where the frost has melted before the smiles of spring, the gardener will lose no time in getting in his Potatoes, Beets, Carrots, Parsnips, Peas, Spinage, Radishes, Lettuce, Onions and Salsafy. These should be the first crops put in after the season breaks up for good. The earlier they are in the better. Asparagus, Rhubarb, and Horse-Radish beds may now be made. 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 about eighteen inches apart. A deep soil is very important, as the succulent stems require every chance they can get for obtaining moisture. 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. Horse-radish 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.

Those who have hotbeds will now sow Tomatoes, Egg-plants, Peppers, and other vegetables that can be forwarded by this means; and those who have not, will sow them in boxes or pans, and forward them in windows. Every garden ought to have at least a few hotbed sash to forward early vegetables; for if they have no means of applying artificial heat to them, the sash will of itself forward some things considerably.

Many parties like to have Turnips sown in spring. The only way to succeed with them is to sow as early as possible, and on a very rich piece of ground, where they may grow speedily. If they do not swell before the hot weather comes, they will certainly run to seed.

About the middle or end of the month, or still later at the North—say the middle of March—Celery and late Cabbage may be sown. Here we usually sow the second week in March.

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.

GOODRICH'S SEEDLING POTATOES.

BY D. S. HEFFRON, UTICA, NEW YORK.

Read before Pennsylvania Hort. Society, Dec. 6,'64.

The late Rev. Chauncey E. Goodrich, of Utica, N. Y., was the originator of this large family of seedling potatoes. Mr. Goodrich was ever a careful observer of atmospheric changes, as affecting vegetable growth; but it was not till 1846 that his attention was specially directed to the "*Potato Disease,*" so-called, then comparatively new here. That year he kept, as was his custom, a journal of the time of planting his potatoes, kind and condition of seed; kinds, quality, and condition of soil; cultivation and product; together with the atmospheric changes in regard to temperature and humidity: noting the first appearance of disease in the leaf, stalk and tuber. After a careful review of all the data within the scope of his observation, and previous to March 1st., 1847, he prepared an "Essay on the Potato disease, mainly as it appeared in the year 1846." This Essay was published in

the Transactions of the N. Y. S. Agricultural Society for 1847. In this paper he cited many facts to sustain the theory of the two propositions following:—1. "The immediate cause of the Potato disease is sudden alterations of weather, occurring at critical periods in the growth of the plant."—2. "The remote cause is the exhausted energy of nearly the whole species cultivated in Europe and the United States."

Near the close of this able, original and practical essay, Mr. Goodrich presents a summary of advice in reference to the cultivation of the Potato, describing the kind, aspect, and condition of soil best adapted to it; the proper cultivation to be given the plant, and how to select the seed. When speaking of the seed, he says: "Get new varieties from South America, if possible."

In April, 1848, Mr. Goodrich planted his first batch of Potato seed in a hotbed; but as his journal makes no mention of the result, it is inferred that he failed to raise any plants: as he had no guide, he allowed too much solar heat, which killed the young plants.

After another year's experience and observation, Mr. Goodrich prepared a second eassay on "The Potato Disease," which appeared in the Transactions of the N. Y. S. Agricultural Society for 1848. The entire article shows evidence of the most careful and discriminate observation, and ably sustains the theory advanced in his previous essay. On the 15th page of the second essay, there is a bit of history and a hopeful inference for the future of the Potato, that, now that we have the fulfillment, sounds almost like prophecy. He writes: "A friend* of mine received on the 27th of April last, three Potatoes from Bogota, the Capital of New Grenada, South America, a country whose elevation is from 8000 to 13,000 feet above the sea, and situated almost immediately under the equator. These Potatoes were planted in a rich, moist clay soil, not the best perhaps to promote their naturalization. They grew finely, exhibited enormous vines, with longer, stronger and more numerous roots and tubers, than I ever before witnessed. The frost of September 27th found them in the full vigor of growth, and *covered with fruit and a number of flowers.* Of the fruit, twenty-five balls were gathered, while numbers were known to have been destroyed. The tubers, it must be confessed, were small and nearly uneatable. These plants perfectly escaped disease. Now is there not reason for confident hope that the seed balls of these Potatoes will form the basis of new and strong varieties, such as our old existing kinds, from the feebleness of their constitutional powers, are incapable of producing, at least, not until after a long series of pro duction and reproduction, under the most careful culture."

On the 21st page of the same article, Mr. G. thus sets forth "*The Complete Remedy.*" This involves nothing short of the regeneration of the race, by the procurement of seed in its highest condition of vitality. "This will probably be best done by importation from some country of which the Potato is a native. Such seed, cultivated according to the suggestion in No. 6, above, and occasionally renewed from the seed balls, and also occasionally, after a term of years, re-imported from its native clime, will probably exhibit all the qualities of possible and needful improvement."

In a subsequent article, dated December 31st., 1850, and published as the preceding, page 729, Mr. Goodrich says: "The theory that the disease is *immediately* dependent on *sudden alterations* of weather, and *remotely* the effect of *exhausted energy*, covers the whole ground of experience; and, when wisely applied, will solve the occurrence of disease in every case."

In all of Mr. Goodrich's later writings on the subject, he also strenuously maintained the correctness of his theory of 1846; and, in a conversation with him but a few weeks before his decease, he said that he still believed that his theory of Potato disease was the only one that would cover all the phenomena connected with it, and is the only correct one. Such I am aware is not the opinion of all the savans of our country and Europe; but the world must yet admit that Mr. Goodrich was, in the main, correct.

I will now give as full a history of Mr. Goodrich's experiments, with results as far as known, as time and space will allow. In the spring of 1849, Mr. G. received the Bogota tubers, and seed balls grown by his friend the year before, as previously mentioned. The tubers were planted in the open ground, in both dry and moist soil, while the seeds from the balls were carefully planted in a hotbed. At the same time, he also planted a quantity of seed that he saved in 1848 from the common round red sort, often called the Western red.

Mr. Goodrich continued his experiments with the Bogota seedlings for several generations; at each seed planting using seed balls grown on the last previous seedling. He made a visible improvement in earliness; but never succeeded in getting any desirable variety from this Bogota stock.

* Mr. Tracy, a brother of Mrs. Goodrich.

Early in 1850 Mr. Goodrich received a quantity of Potatoes imported from Chili. These were some improvement on the Bogotas, produced seed balls abundantly, which gave him ample seed for further experiments. The original tubers were red, round, and very healthy; in size they were fair, but their quality for the table ranked low. In April, 1851, at great expense, Mr. G. again obtained a stock of Potatoes from Chili. This stock contained three colors,—light red, red, and purple; the last afterwards named Rough Purple Chili. The light red Chili's bore seed balls, but were too late to mature here. The seedlings from this variety were much earlier than the parent, were hardy, quite productive, and had white flesh.

The red Chili's were hardy, tolerably productive, had white flesh, matured in season for a winter potato; but were scarcely eatable. As this variety bore no seed balls it could not be improved, and was soon rejected. The Rough Purple Chili was an acquisition of great value, as from it have sprung the most of Mr. Goodrich's best seedlings. This was quite knotty, its great fault, but it was early enough to mature well, yielded well, had fair table qualities, and produced seed balls moderately. From this Mr. Goodrich grew 1700 seedlings in 1853, one of them receiving the name of Garnet Chili. Out of nine imported varieties there was only the Rough Purple Chili, that possessed sufficient merit to warrant its continued propagation.

Mr. Goodrich also experimented upon a variety of the Yam potato, in hopes of securing, by reproduction from the seeds, an early kind, suitable for cultivation North. In this he was only partially successful. He also experimented upon Potatoes from Oregon, as well as their seedlings, with encouraging results. A few weeks before his decease, Mr. Goodrich told the writer that he had grown and tested at least 16,000 varieties of seedlings. Out of the first 2000 varieties tried, from one to five years, only fifteen varieties had been sent out in any quantity previous to 1861. Since then, only a few other sorts have been spared for trial. In 1853, 4 and 5, Mr. Goodrich scattered his earliest seedlings and the Rough Purple Chili, almost broadcast over the land; so anxious was he to benefit the public, that he did not stop to sell them, but sent out, free, large assortments of them to many of the Northern States. The following are the principal named varieties that originated with, and were sent out by Mr. Goodrich:

1. *The Black Diamond*—A grand seedling of the Western Red, originated in 1852. Round, dark purple, yield good, matures with the season, bears no balls.

2. *The Garnet Chili*—Originated in 1853, from the Rough Purple Chili. It is round, a little inclined to be rough; light red, good table quality, and matures with the season.

3. *The Mountain June Pink Eye*—Derived from the Old Early June, in 1853. Slightly rough; white, with purple splashes, and pink eyes; yield good and bears balls freely.

4. *Utica Pink Eye*—Brother of No. 1. Round, white, white splashes of pink and pink eyes; yield large; not entirely hardy, early good quality, no balls.

5. *Pale Blush Pink Eye*—From Western Red, in 1850. Round; a blush white when wet, with pink eyes; yield medium; moderately hardy; early, bears some balls.

6. *Ovate Peruvian*—Originated in 1853, from a wild Peruvian; ovate, white, good yield, moderately hardy; rather early, and bears a few balls.

7. *New Hartford*—Brother of No. 6. Longish, knotty, white; yield large, moderately hardy, bears balls freely.

8. *Amazon*—Seedling of a wild Peruvian, in 1855. Large, round, smooth, light red, yellow fleshed; yield large; a little earlier than Garnet Chili, bears some balls.

9. *Cuzco*—Origin same as No. 8. Round, large, deep eyed, white, sometimes slightly pinkish; yield very large; bears balls freely; a little too late for Central New York, but is well reported of in the latitude of Philadelphia, in 1864 especially.

10. *Titicava*—Brother of Nos. 8 and 9. Round, large, deep eyed; light red; yield good; bears balls moderately, and matures September 12th.

11. *Callao*—Brother of the three previous. Very long, smooth, medium size; light purple; bears balls moderately, and matures with No. 8.

12. *Central City*—Originated from No. 5, in 1856. Varying from roundish to kidney-shape; size, medium to large; white, with a pinkish hue at the root end; yield medium; ripe last of September, and bears a few balls.

13. *New Kidney*—Brother of No. 12. Varying from egg to kidney-shape; smooth, size medium; pinkish white when first dug; yield large; matures September 12th, and bears no balls.

14. *Copper Mine*—Brother of the last two. White, with a coppery hue; eyes pink; yield good hardy here, but sometimes a little tender further south; matures about September 12th, and bears balls abundantly.

15. *Pink Eye Rusty Coat*—Brother of the last three. Large, round; a brownish rusty coat, a little pink-eyed; yield large; matures last of September, and bears no balls here.

16. *White Chili*—Originated in 1856, the third generation in a direct line from an imported Chili. Round, white, hardy; yield large; bud too late to mature here. A few only were sent out.

17. *Andes*—Originated in 1857, a grand seedling of wild Peruvian, as are Nos. 8 and 11. Round, large; white, with splashes of purple; yield very large; bears balls freely, but too late for culture here.

The following three have not been sent out except on trial till this fall, and thus far but a few have been ordered:

18. *Calico*—A seedling of the Garnet Chili of 1859. It is thus described by Mr. Goodrich in his journal: "White, with irregular sharply defined splashes of red [purple]; longish, flatish, smooth, and most beautiful. Vines spreading and dark; leaves, large and dark [green]; flowers, bright lilac; yield large; no [seed] balls." It ripens with or a little earlier than the Garnet Chili; cooks white and dry, for a late seedling; promises well for winter use. On one piece of ground, this variety has yielded this year over 300 bushels to the acre; while a second piece has produced at the rate of 400 bushels to the acre, planted three feet each way.

19. *Early Goodrich*—A seedling of the Cuzco, in 1860. In 1862 Mr. Goodrich described it: "Round to longish, sometimes a crease at the insertion of the root; white; flowers bright lilac; [produces] many balls; yield large. Table quality is already very good. This root is Number One every way." It is as early here as the old Early June; and though it matured this season during the long drouth, it yielded 350 bushels to the acre; planted as the preceding. Most promising.

20. *The Gleason*—Also a seedling of the Pink Eye Rusty Coat, No. 15. When two years old, Mr. Goodrich described it thus: "Longish, rusty coppery; leaves and vines dark green; flowers white; a very hopeful sort." At digging time, September 29th, 1863, he added: "Very nice, many in the hill, no disease. This season, 1864, under Dr. Gray's cultivation, this variety has yielded at the rate of over 400 bushels to the acre, all sound. The tubers are not over-grown, but numerous, having a fine-grained solid flesh, that is white when cooked. It is the most promising winter potato of all Mr. Goodrich's seedlings named.

Dr. Gray, of the State Lunatic Asylum, has yet 24 varieties of Mr. Goodrich's seedlings of 1859 and 1860, under trial. A Mr. Gleason, of Mass., has all saved of 1861. The writer has grown this season 140 varieties of seedlings of 1862 and 1863: fifty of these are seedlings of the Early Goodrich, two or three seeming to be earlier than the parent.

BEDDING PLANTS.

BY SWIFT, DELAWARE COUNTY, PA.

In visiting most of the gentlemen's places in this vicinity during the past season, one could scarcely fail to observe the paucity of plants used in bedding-out. A stranger coming among us for the first time, would be led to suppose we have no plants to bed-out with. Generally speaking, two or three varieties of plants go far towards making up all the beds really contain. Of course there is a reason for this. A lady will spend twenty or thirty dollars on seeds of annuals, two-thirds of which may prove worthless; whereas, if the same sum were spent in the fall or winter months on bedding-plants, the gardener could so far increase them, as to make her flower-garden the following summer a perfect paradise of bloom.

The idea is prevalent that our fine greenhouse plants are not adapted for bedding purposes. This is erroneous. Many of them are very beautiful, and when planted with taste and discernment, give more real pleaasure, and present a galaxy of floral luxury truly wonderful, not only in the color and sweetness of their flowers, but in the varied forms of their foliage.

What more beautiful than *Russelia juncea*, with its graceful grass-like foliage and scarlet flowers; or that varied class of plants, *Gloxineas*, whose many-colored flowers, resting on a bed of leaves, of such velvety texture, that it surpasses the skill of man to rival.

The flower-garden is, or should be, the *sanctum sanctorum*, over the gates of which should be written, "Whoever enters here leaves care behind." Here nature, prodigal of her manifold beauties, has centered all that is lovely, all that is beautiful. Truly we pity the man who has no flower-garden; or, whose lust for gain compels him to introduce the coarser truck of the vegetable garden, thereby destroying that harmony of feeling which ought to provail. Then let us by all means have one place on our grounds free from the contaminating influences of the outside world,—one spot where, away from the cares of daily life, we may say with truth, "Here we rest."

THE CATAWBA GRAPE.

BY W. H. DENNING, FISHKILL, DUTCHESS CO., N.Y.

Why in all grape discussions is the old Catawba left out of the list of good ones. If properly cared for, it will ripen well, and is a good bearer and a handsome fine flavored grape. I do not find its equal or superior, in the opinion of the public in market, for price paid for it, or by my friends at my table selecting it from the other varieties. In a cold season in some places it does not ripen well, but with me it seldom fails. I will now tell you a story of a single vine:

Twelve years ago I trained a vine against the south side of my carriage-house, but being exposed to the south-east wind blowing from the water between two buildings, the grapes blew off. I then made an arbor between the carriage-house and a low shed, 22 feet wide; since then it has prospered, and this year yielded 455 pounds of splendid grapes. It is three inches in diameter at the root; a single stock goes up nine feet and covers an arbor 22 feet by 40. On one side its root passes under a row of horse stalls, on the other into a kitchen drain. In what line of profit would the renewal system work, cutting down my splendid old vine? As a market fruit, I find it best-of all, and prefer it on my place to *any* of the new varieties, although I have them *all* from my friend Dr. Grant, who, in spite of your or any other's opinion, has at Iona "the very best grape." . . . . I will not continue a subject on which we will differ. I never bury my vines, nor do any summer trimming.

[There is no difference between Mr. Denning and ourselves on this Catawba Grape question, wherever there may be between Doctor Grant and him on the Iona.

Our opinion has been freely and frequently expressed, that severe trimming (summer and winter), eventually enfeebles the constitution of the most vigorous varieties; and feeds the continual demand for 'new varieties,' that will not 'rot or mildew,' to take their places.

Give the Catawba room to ramble, as over an old apple-tree, for instance,—no pruning or training,—partial shade (as again on the old tree), and good muck of any kind mulched about its roots, and no digging up or doctoring, and we will back the Catawba yet against nearly the whole list.—ED.]

THE EVERGREEN PRIVET.

BY CHRONICLER.

The *Evergreen Privet*, when well grown as a shrub, is a most beautiful bush when in bloom, and is highly odoriferous; the flowers are greatly relished by bees. During a short visit to the residence of Mr. Henry D. Sherrad, near Haddonfield, N. J., last June, I noticed a large and handsome Privet shrub in bloom; every young twig was crowned with a cluster of rich and waxy white blooms; almost the entire foliage was hid by the flowers, and their fragrance was perceivable many yards off. From morning till night, swarms of bees were about the bush, both in clear and cloudy weather. Although the lawn was covered with white clover in bloom, and the adjoining fields contained the red, also in bloom, the bees chose the Privet.

As the Privet is most generally grown in hedges, on account of its compact growth and beautiful foliage, many persons may never have seen it when in bloom as a shrub. The annual or biennual clippings of hedges prevent their blooming, as the flowers are produced upon the ends of the young shoots of the previous year's growth. The Privet flourishes on a great variety of soils; but it blooms most freely where the soil is not too rich. Very few shrubs have such a pretty foliage as the Privet, and very few are more deserving of a place in the pleasure-ground.

[To the above well-merited praise of this beautiful shrub, we may add, that it will grow and do well on dry gravelly banks, where scarcely any thing else will do.—ED.]

HEMLOCK FOR HEDGES.

BY W. BACON, RICHMOND, MASS.

Whoever has sojourned or passed through our beautiful but quiet village of Lenox, the Shire town of Berkshire County, has noticed, or at least has had opportunity to notice, on the lot next adjoining the Academy, on the north, two as beautiful hedges as any one could desire to see, even on his own premises. Although they have been out long enough to get well established and begin to show that they answer full well for all the purposes of division of village lots, they maintain a uniformity of growth that shows that the plants are at least twin brothers in their habits, and mean to sustain their relationship, by giving each other an equal chance in the world, such as it is always pleasant to see among members of the same family.

The soil in which these Hemlock hedges flourish so well, is a clayey one, and inclined to much moisture, especially in wet seasons. In very dry times, it, like all such soils, of course becomes compact. Consequently, what will flourish there, may aptly

be supposed to have a hardiness and capacity to sustain itself anywhere.

The Hemlock, whether considered as a tree or plant. has been much abused by being so long left out of public favor. There has, perhaps, been no tree that has suffered more in reputation. The fault of this, however, lays more in individual taste than in any demerit of the tree. There is no native evergreen of finer and more delicate foliage. Its hardiness allows it to be trained to any form the fancy of the amateur of fanciful forms may dictate. The fresh leaves of spring furnish an agreeable and pleasing contrast to that of a deeper hue of the previous growth. When standing alone, in its native soil, unless disturbing causes prevent, it forms a beautiful cone, by its branches extending wide at the surface of the earth, and tapering gracefully and symmetrically to its apex. It is well worthy of a place in the lawns of the curious for its very beauty's sake.

As a plant for hedges, it is no less beautiful. Its dense foliage soon transforms it into a wall of verdure, thick and impenetrable, even to the smaller animals of the farm. Its deep tint of green brings reminiscences of summer, even in the most desolate and cheerless gloom of winter. When the warm sunshine of spring revives its energies, it throws out its pale and delicate leaves to the gentle breezes, thus giving variety to beauty, until maturing influences give them the deeper and more imperishable hue of summer.

At the north, the Hemlock is found in nearly every soil, but is more especially at home in cold mountainous regions. It frequently springs up in old pastures, in old knolls, in swampy regions, and over the ruins of old logs in swamps. Like most evergreens, its removal must be attended with more care than is usually given to deciduous trees, or failure will be likely to result. We have succeeded best in the removal of its kindred trees, by taking them from old pastures where the soil is thin, and where, of course, the roots spread near the surface, so that we were enabled not only to take all or nearly all of the roots with the soil attached; when so taken and planted, in ample holes, no loss need be realized from the operation. Although the Hemlock may be removed with success, when proper care is used, at almost any season, yet there is a best time for performing the operation. This time has proved to be, in our experience, after the buds had broken for a new growth, and when all the energies of the plant are in good working order. We have set them when an inch of new growth had been made, and with full success, and would prefer this time to one when all the powers were nearly inactive.

[Our columns are usually so well filled by the interesting correspondence of our liberal contributors, that we have seldom a chance to append notes of our own. For the benefit, however, of those who would add to their grounds one of the most beautiful objects the vegetable kingdom is capable of affording, namely, a Hemlock hedge, we would say in addition to what Mr. Bacon has so beautifully and truly said of it, that the conical form of trimming is essential to its long-continued beauty. Under the angular system, it begins to get thin at the base after about ten years of age. Thanks to the good example of friend Moses Brown, one of the most correctly tasteful of Philadelphia amateur horticulturists, Hemlock hedges have long been the pride of many of that city's suburban gardens; and we are sure their owners will feel very much indebted to Mr. Bacon, for this just tribute to their favorite hedge plant.—ED.]

NOTES FROM CLEVELAND, OHIO.

BY F. R. ELLIOTT.

I do not write with a view to criticise; but one or two items in your November number induces me to give you some of my experience:

You speak of covering herbaceous plants with leaves, adding soil to keep them in place. My experience is, that in this climate such covering will not answer, because of the decay and mould caused by the wet leaves; place the leaves, and cover with a board, so that the leaves are always dry, and the results are good,—otherwise bad.

Again: "All Raspberries are hardy where their canes ripen well." Not so here. All ripen well, aye, perfectly,—unless it may be Belle Fontenay,—but few are in truth hardy. True, we get partial crops from Orange, Fastolf, etc., but none are depended upon without protection, except False Red Antwerp, which is, as I long since wrote you, identical with Allen and Kirtland.

Peaches and Cherries having been cut off by the frost of last January, we have endeavored to keep up our hearts for another year by our crop of Grapes. Immense crops have been grown by some parties. One man, on less than 1¾ acres of Catawbas, realized $3600, from his fruit. Several others came near that mark, and all successful. The result is that large plantations are again to be made next year. Even Cincinnati men have come upon our Lake shore and invested in land, for the purpose of grape growing. And now Grape Compa-

nies are being formed,—tracts of land of two, three four hundred acres bought up, made into shares, with designs of planting largely next spring.

My Grape Show, of which you took no notice, this fall, was a success, so far as the collection of fruits and wines made it so; but it came just as a draft was being had here, and the people, as a body, were more interested in knowing who must go to the war, than of comparing kinds of grapes. Of white or green Grapes, I had Maxatawney, Anna, Cuyahoga, Rebecca, Allen's Hybrid, and Lydia; and a comparison by many persons of their eating qualities, gave universally the preference to Lydia. I took Lydia several times to a collection of hot-house grapes on my tables, and the expression was again in favor of Lydia, over Syrian, White Nice, etc. One, the "Chaptal," was regarded as better than Lydia; but of all the others, Lydia was pronounced sweeter and more sprightly.

At our Pomological meeting, held last week, I started a proposition to form a State Grape and Wine Association. It was heartily joined in, and as soon as I can, I shall issue a circular, calling for names of those who will join, and for the holding of our first meeting at Cleveland, in February; and next autumn I hope the society will be so formed that it will gather together a splendid show of fruits and wines.

There is a little matter of manures that I wish could be touched up out of the old routine of composts, etc., and the following up of ideas based on analyses. You know we have been taught that Grapes must have a large per centage of lime in the soils, for any certain success. To a certain extent it is bosh. Our soils around Cleveland have hardly a trace of lime in them, and yet fine grapes are here grown. I believe that either on clays or sands, light dressings of gypsum, say one and a half bushels to the acre yearly, will supply all the lime requisite: and for dwarf Pears, what is better than salt and lime mixed and dissolved together?

Did you ever try Copperas-water in solution of Sulphate of Iron, both as a wash to the bodies of Pear trees, and also as applied to the roots. I tried it years ago with success, for leaf blight. I believe it would be successful as a preventive of blight in Pear trees.

If you can extract ideas from any thing I have said, I shall be glad; but I do not write this for publication in your magazine.

December 22nd, 1864.

[Though not "written for publication," we avail ourselves of Mr. Elliott's permission, to insert it here,—as its numerous suggestions well deserve.—As for lime being essential to grapevines,—or at least so essential as most people imagine, we have only to look to the great success of the grape in the deep sand of New Jersey for the answer.

We unfortunately receive notices of meetings too late to be of service. It is our desire to aid horticultural associations by every means in our power; but we have to go to press early on account of stereotyping,—the only horticultural or agricultural paper but one, we believe, that is so preserved,—and notice should reach us at least six weeks in advance of the meetings to do any good.—ED.]

PLANTS FOR A FLOWER-GARDEN.

BY C. M., RYDE, ISLE OF WIGHT, ENGLAND.

Noticing in your *American Gardener's Monthly*, which we regularly receive, plans of gardens which exist and have existed at this place, (for some have changed somewhat since the plans you gave were made), I thought you would be interested in knowing what plants some of the sets of flower-beds are filled with.

The following is a rough sketch of our 'sea-shore' garden, and a list of the things the beds were filled with last year, with numbers to correspond to beds. As you will see, by the steps represented on two sides of the semi-circle, the beds are looked down on from a terrace, about four feet above the level of the beds:

Nos. 1 and 4—Blue Ageratum, edged with Verbena Venosa.

2 and 3—Dwarf French Marigolds, edged with crimson Ivy Geranium.

5 and 6—Planted in four rows, inside, Mangle's Variegated Geranium; next Gazania splendens; next Purple King Verbena, and Cineraria maritima for a backing.

7 and 8—In four rows: inside, Variegated Alyssum; next Lobelia speciosa; next Cloth of Gold Geranium, and Geranium Baron Hujel for backing.

9—Geranium Lord Palmerston, scarlet edged with common Ivy.

10—Geranium Lady Rokeby, scarlet, edged with common Ivy.

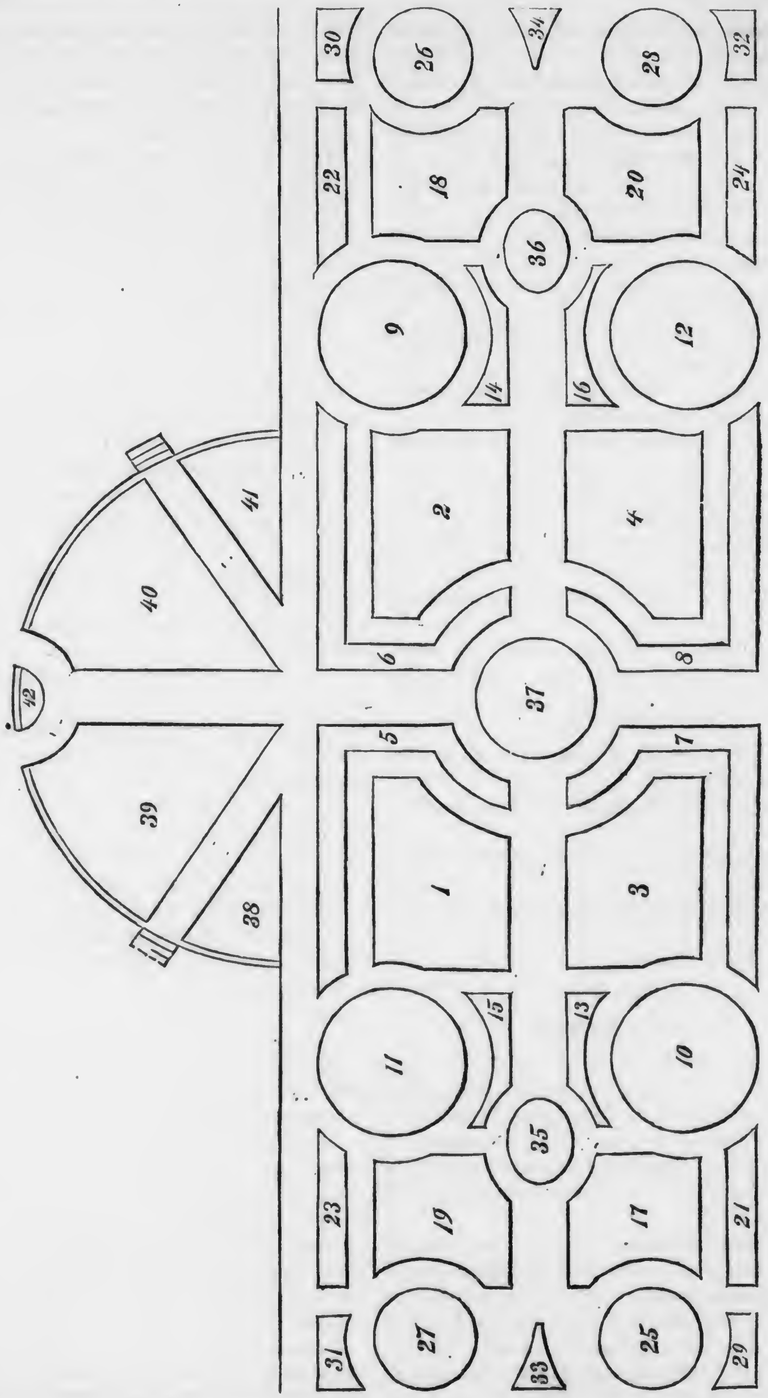
11 and 12—Pink Variegated Geranium, edged with variegated Ivy.

13 and 14—Gazania splendens.

15—Verbena Lord Leigh, scarlet, and Ocean pearl, plum color.

16—Verbena Mrs. Holford, white, and Lord Craven, plum color.

17—Salvia patens, blue, in the center, edged with Geranium Harkaway, scarlet.



18—German Stocks and variegated Geraniums mixed; planted thick, so that as the stocks become seedy they can be pulled up, and the Geraniums take their place; this answers very well.

19 and 20—German Asters, colors principally blue, edged with pink Geranium.

21—Dwarf yellow French Marigold, mixed with Verbena Mrs. Woodruff, scarlet.

22 and 23—Biennial scarlet Lobelia, mixed with Cineraria maritima.

24—Œnothera prostrata, yellow, and Purple King Verbena mixed.

25 and 26—Heliotrope, border golden variegated Ivy-leaf Geranium.

27 and 28—Center of Perilla Nankinensis, broad border of variegated Geranium.

29—Blue Lobelia and Golden-chain Geranium mixed.

30—Blue Forget-me-not (Myosotus Azorica).

31—Balsamina latifolia.

32—Blue Lobelia and silver variegated Geranium mixed.

33 and 34—Verbena Imperatrice Elizabeth (very dwarf).

35 and 36—In the center a shallow vase, standing on a thin pedestal, filled with scarlet bedding Nasturtium, the bed filled with Cerastium tomentosum and Scarlet Verbena mixed.

38—Geranium Stella, edged with variegated Agathea cœlestis.

38—Mixed Petunias, edged with Bellis aucubæfolia.

40—Lantana crocea, edged with Sedum carneum variegatum.

41—Geranium Helen Lindsay, edged with Arabis variegata.

42—A small fountain.

TREE SHRINES.

BY NOVICE.

Not "with scallop, staff, and sandal shoon," but in a more prosaic and modern guise, mounted on four wheels, behind an easy going Morgan gray, I set out, on a mild September afternoon, to fulfill a long neglected vow of a pilgrimage to the old Seckel Pear tree.

Widely as its fruits are known, it was with no little trouble, cross-questioning, tramping across cabbage gardens, backing and filing among the tortuous and numberless highways and byways that intersect, in every direction, the alluvial plateau south of Philadelphia, known, in classic tongue, as "The Neck," that the object of my search was, at length, found out, near the confluence of the Delaware and Schuylkill rivers, on one of the many farms bequeathed by the late Stephen Girard to the City of Philadelphia, as part of the endowment of his Orphan's College.

Would you find it, reader mine, with a tithe of the pother and time it cost me,—then drive straight to the Point Breeze Park race course (any sporting friend or fast man can tell you where *that* is) follow the narrow lane which skirts it on the east, till a pair of bars obstruct your further progress; then inquire of the inmates of the humble farm house, just over the fence, and they will kindly point you to the object of your journey.

It stands in an open grass meadow, reclaimed long years since from the passing waters, surrounded by a plain substantial fence of post and rail, erected at the thoughtful instance of the late Dr. W. D. Brinckle, as a protection against the depredation of cattle and the rude root-pruning of the plow.

Like most great historic personages, the tree is of small stature, being only about twenty-five feet high, compact in form, and giving no signs in limb or branch of decrepitude or decay. Yet the trunk, which would measure six feet in circumference, if sound and entire, is now reduced to a mere shell of about two inches in thickness, and encircling only the south-easterly half; yet, such is the inherent vigor of this little monarch among pears, that he has survived many a prop put up to sustain his declining years. A stout oaken scantling the last of all his supports, has long since gone the way of all departing timber, and still the hearty little tree lives on, in a green and hale old age. From his crown there have sprung up two thrifty vigorous shoots, about eight feet each in height, which, mayhap, shall hand down his lineage to human generations yet unborn.

It is said that on the death of the old Bourbon Kings of France, the Grand Chamberlain appeared at the main balcony of the palace, and, snapping his wand of office in twain, announced the decease of the reigning sovereign, the accession of his successor, and the perpetuity of the monarchy, in those portentous words: "Le roi est mort; vive le roi." So when the noble parent of all the Seckels bends to the earth. and bows his head to the fiat of mortality, shall his youthful scions renew his reign, to bless and cheer the ages yet to come. Selah!

Various are the traditions of its origin, handed down among the ancient denizens of the Neck. One will have it that a German sportsman, in pursuit of waterfowl, drew his boat upon a grassy hummock rising above the water, and threw the seeds of a pear which formed the dessert of his simple meal, upon the soft ground, where one germinated, and grew to be the delight of two hemispheres.

Another says that a slender seedling, floating down upon the river's breast, perchance took root in the sedgy mould, and so it came to be a tree.

However it may be, the following scrap of its history is probably as authentic as any, and is given as a foot note in "Downing's Fruits and Fruit Trees of America:"

"The precise origin of the Seckel pear is unknown. The first pomologists of Europe have pronounced that it is entirely distinct from any European variety, and its affinity to the Rousselet, a well known German pear, leads to the supposition that the seeds of the latter pear, having been brought here by some of the Germans settling near Philadelphia, by chance produced this seedling. However this may be, the following *morceau* of its history may be relied on as authentic, it having been related by the late venerable Bishop White, whose tenacity of memory is well known:—About 80 years ago, when the Bishop was a lad, there was a well known sportsman and cattle dealer in Philadelphia, who was familiarly known as "Dutch Jacob." Every season, early in the autumn, on returning from his shooting excursions, Dutch Jacob regaled his neighbors with pears of an unusually delicious flavor, the secret of whose place of growth, however, he would never satisfy their curiosity by divulging. At length the Holland Land Company, owning a considerable tract south of the city, disposed of it in parcels, and Dutch Jacob then secured the ground on which his favorite pear tree stood, a fine strip of land near the Delaware. Not long afterwards, it became the farm of Mr. Seckel, who introduced this remarkable fruit to public notice, and it received his name. Afterwards the property was added to the vast estate of the late Stephen Girard. The original tree still exists, (or did a few years ago), vigorous and fruitful. Specimens of its pears were, quite lately, exhibited at the annual shows of the Pennsylvania Horticultural Society."

Lorenz Seckel was a well known wine merchant of Philadelphia, and the farm on which the tree stands was his country seat, in a then somewhat fashionable rural district, now given over to the growth of plethoric cabbages, endless tomatoes, and onions infinite.

Of further historic wanderings, your pilgrim may, at some time future, when the spirit moveth him to write, and your congregation graciously to listen, more indite.

[There is an anecdote afloat to the effect, that during the 'witchraft' times, a poetical genius went into a church, wherein was a prosaic preacher reading a sudorific to his congregation. Nearly all the audience were asleep. The celebrated fellow with the horns was seen at the back of his reverence, busily engaged in taking down the long roll of sleepers, against the great judgment day. His fear was they would awake before he finished; hence he wrote in agony. He got to the end of the parchment before half the names were down, when taking the end in his tusks, and the two sides in his claws, he stretched it with such awful force as to break the parchment, crack his horns against the wall behind, and wake up the whole congregation by the force of the blow.

Our 'scribe' will need no such accident to keep our congregation aroused. We have looked carefully around, and did not see a single sleeper, nor any sign of drowsiness. They rather seemed vexed that the reading was so soon ended, and will, we are sure, take a good sleep in advance, to be ready for his next entertainment.—Ed.]

ORCHIDEÆ.

THEIR USE, CULTURE, AND VARIETIES.

Read before Pennsylvania Hort. Society, Dec. 6,'64.

BY WILLIAM JOYCE.

The uses to which the plants of this family are applied are few, but in several instances highly romantic. In Demerara, the Wourali, that most deadly of all poisons, is thickened by the juice of the Catasetums; and in Amboyna, the true Elixir of Love is prepared from the minute farina-like seeds of Grammatophyllum speciosum. In Mexico, where the language of flowers is understood by all, the Orchidaceæ seem to compose nearly the entire alphabet: not an infant is baptised, not a marriage is celebrated, not a funeral obsequy is performed, at which the aid of these flowers is not called in by the sentimental natives, to assist the expression of their feelings,—they are offered by the devotee at the shrine of his favorite saint, by the lover at the feet of his mistress, and by the sorrowing survivor at the grave of his friend; whether, in short, on fast days or feast days, on occasions of rejoicing, or in moments of distress, these flowers are sought for with an avidity which would seem to say that there was no sympathy like theirs. Thus, Flor de los Santos, Flor de Corpus, Flor de los Muertos, Flor de Maia, No me Olivides or Forget-me-not, are but

a few names out of the many that might be cited to prove the high consideration in which our favorites are held in the new world. Nor are these the only honors that are paid to them, for Hernandez assures us, that in Mexico the Indian chiefs set the very highest value on their blossoms, for the sake of their great beauty, strange figures and delightful perfume; while in the East Indies, if Rumphius is to be credited, the flowers themselves positively refuse to be worn, except by princesses, or ladies of high degree. In Honduras, the large hollow cylindrical stalks of a fine species of Epidendrum tibicinum, are made into trumpets by the little boys and girls of the country; and the pseudo-bulbs of several of the more succulent species are used instead of resin for the strings of their guitars. The following are, however, almost the only known instances in which the tribe do any direct service to mankind. The bulbs of Maxillaria bicolor contain a large quantity of an insipid watery fluid, which is greedily sucked by the poor natives of Peru in the dry season. A fluid of a similar nature is obtained from what is probably Lælia, in Mexico, and is administered as a cooling draught in fevers. From the roots of some of the orchids the nutritive substance called Salap is obtained; in New Zealand certain species are of considerable importance as esculents; and in Guiana the soles of the shoemaker as much indebted to the viscid matter obtained from the Catasetums and Cyrtopodiums, as are the poisoned arrows of the Indians. Mr. Bateman, speaking of the fragrance of many of this order, says, "We question whether Araby, the blest, can boast of any perfumes that can at all compete in sweetness with those exhaled by such plants as Angræcum odoratissimum, Tetrapeltis fragrans, Aerides odoratum, and Epidendrum aromaticum. Other species emit odors, which remind the recipient of the smell of a druggist's shop, of the milk of the Cocoa-nut, of fresh mown hay, of wall-flowers, violets, pomatum, aniseed, and angelica, cinnamon, allspice, citron, musk, and honey. Some of them yield no fragrance except in the day time; but there are others which, like Epidendrum nocturnum, and Brassavola nodosa, are aromatic only by night; and there are none, we believe, which are positively offensive at any hour, either of the night or day.

The attention and curiosity are excited no more by the beauty and delicacy of the blossoms of many of this tribe, than by the close resemblances they bear to objects of the animal kingdom. In our native species, we find the fly-spider, lizard, man, etc., surprisingly imitated; and in the warmer climates, swans, eagles, doves, pelicans and butterflies, &c.

The cultivation of Orchideæ may be treated under two heads, namely, that of Terrestrial and that of Epiphytal Orchideæ.

Terrestrial Orchideæ should never have a great volume of external air admitted at once, however fine the weather may be. A little at a time, is the rule, as there is nothing more injurious to this family than sudden changes. It should be taken off in the same manner. To prevent the house from becoming too hot, a thick canvass shading should be drawn over it when the sun shines very hot. This is better than coating the glass, for, in dull weather, the coating makes the house too dark. In early summer, when the days are generally warm, and the nights a little cold, but not cold enough to have a fire, the coating on the glass keeps the house too long in the morning from becoming warm.

During the growing season, Orchideæ require a moderately moist heat, varying from 65° to 85°; in the dormant season, from 60° to 75° is quite sufficient; in the season of rest the house should be kept dry. Orchideæ, in pots, should be sparingly watered in the growing season; in the dormant state, little or no water should be given. The great and only secret in growing Orchideæ, is to take care never to kill the old roots: when too much water is given, while the plants are in a growing state, almost all the old roots perish.

Epiphytal Orchideæ may be grown in the same house with, and receive nearly the same treatment, as the Terrestrial, except that they require to be grown on, instead of in, the soil, attached to blocks of wood, in baskets, or any rustic construction in the basket way, and suspended from the roof, or any other suitable place. At the outset, before the plants are established on the blocks of wood where they are intended to be grown, it is very necessary to secure firmly the plants, by means of fine copper wire. The best kinds of soil for growing the Epiphytal species on is found to be good surface peat, cut into pieces of from one to two inches square. In potting, the pots should be nearly half filled with lumps of charcoal; if charcoal cannot be had, broken pots will answer,—it is very necessary in placing the pieces in the pots, to set them on edge: the water passes through quicker, and gives the roots a better chance to work, to the bottom. It is of the greatest importance to preserve and encourage the roots, and, as they are generally protruded near the surface of the soil, it should be raised several inches above the level of the pot, in a pyramidal form, in order that they may have full room to push out.

Potting should be performed just as the plants commence to grow; syringing the plants moderately when in a growing state, till the flowers are nearly expanded, helps their growth very much, but great care must be taken in watering to keep the water out of the heart of the young growth, as it causes it to damp off, particularly Gongoras, &c.

Propagating is readily done, by dividing of the roots. There are some species which grow only from a leading shoot, such as Catleyas, Epidendrum Schomburgkias, etc. The only way to multiply these species, is to cut the leading shoot behind some fresh roots; that will cause the wood behind to start and grow, providing the old roots are healthy.

[*To be continued.*]

WHEAT TURNING TO CHESS.

BY "SKEPTIC," NEAR MONTREAL, CANADA.

In your last issue is an extract from the *Canada Farmer* on this subject, which interested me somewhat, from its bearing on other topics which I have seen discussed. I am not myself assured that wheat will turn to chess. I am willing to concede to scientific men that the most rigid proof should be a condition of receiving as facts assertions that seemingly oppose *what we believe to be* general laws. Without doubting that wheat *might* have turned to chess in the instance cited, a caviller has still the chance to object, that vermin might have taken away the wheat through winter, and the chess would be very likely to come up in the newly stirred ground. I do not say this was so; but essay the remark as showing how objections can be made against circumstantial evidence. The best proof would be from the opposite side, in this way:—Wheat is never found wild, but chess is; Chess seed may, therefore, be in the soil naturally; but wheat seed will not be. If wheat will degenerate to chess by neglectful culture, chess ought to advance to wheat by good cultivation. Instead of giving chances to cavillers to say, "there may have been seed of chess in the soil," try to turn the chess into wheat by good cultivation. As good wheat seed will not be naturally in the soil, the argument, when the chess turned to wheat in a pot or box, would be triumphant.

Though willing to admit the weakness of most arguments, I am ready to grant the provoking and silly obstinacy of many scientific men. They make human laws into 'natural laws,' and pronounce 'perfectly impossible' every thing that does not accord with preconceived theories. The public idea, I have frequently noticed, is a long way ahead of science; though I am willing to admit very much more often a long way behind. I was brought up a gardener in the south of England, and at the time I was a young man, much interested in every day scientific matters that had a connection with scientific pursuits. Two of the debatable questions of that day were, whether snakes would swallow their young, and whether the toad was not either viviparous or oviparous, according to circumstances. I left England during the discussions, and do not know how the questions were decided; but I remember very well, indeed, that all the scientific men showed how utterly impossible it was that toads should bring forth their young alive, or that young snakes could ever go down into the mouth of their mothers, and come back again at will. I once had a chance to see a whole brood of young snakes that were sunning themselves with the old one, run down the throat of the parent,—whether into the stomach or into some other sac provided specially by nature for the purpose, I am not able to say. With regard to the toad, I have seen hundreds of them spawning in the ponds of Hampshire and Sussex, settling the matter as to their oviparous character. And though I have not actually seen the young toad brought forth alive, I have had toads shut up in greenhouses, where there was no water, and far away from any water from whence young toads could travel, if that objection were made, and yet my pits and greenhouses have been full of young toads no larger than peas,—coming, as near as circumstantial evidence can, to a positive proof that toads are viviparous.

I have, since settling in Canada, and pursuing my vocation as a farmer, had occasion to recall these circumstances, as applicable to scientific men. Things have been brought out as bran new scientific discoveries, which I well know were long before known to the English peasantry; but were at that time scouted by scientific men as decidedly impossible, and contrary to nature's known laws.

I am no believer myself in the chess theory; but I think scientific men should rather take the Scotch plan of deciding it "not proven," than to shut down on all evidence, by declaring it from the start, "unnatural," when they don't know certainly what nature is.

If I can aid in diffusing this scientific charity, the end of this writing will be accomplished.

HOT-WATER TANKS AS A METHOD OF HEATING.

BY W. C. STRONG, BRIGHTON, MASS.

I can best give my opinions in regard to Hot-water tanks by relating my own experience. In the winter of 1863-4, I finished two span-roof houses, each 60 feet in length, with water tanks three feet in width, running entirely around on both sides of each house, and heated by a single furnace. The tanks were made with wooden bottoms and sides, and covered with slate carefully cemented. My design was to heat the houses entirely by the tanks, by far the larger portion of the heat being given off from the slate covering, and as a bottom heat for plants. As I understand the various writers upon this subject, this is the approved plan. But I have found considerable difficulty, and have been obliged to modify my plan in various respects:

In the first place, wooden tanks, with the top covered with sand, will not give off heat sufficiently to keep up growth in houses of this size during extremely cold weather. By protecting the houses with shutters, this difficulty may be obviated. Crowding the fire, and raising the water in the tanks to a high temperature, is a more objectionable remedy. In this way the bottom heat is too strong. But my most serious difficulty has arisen from excessive humidity. I put three inches of sand over the whole slate surface of the tanks, using a part for cuttings, and the rest, (say 100 running feet of the three feet wide table), for standing pot plants upon the surface of the sand. The plants dried rapidly, and required watering every morning. The result was, that in watering the plants, and of course the sand on which they stood, to some extent, it was like pouring water upon a flue, or upon hot pipes: a constant steam was given off; all the moisture in the sand was rapidly converted into steam; so, also the water in the pots was quickly expelled. In order to heat the house sufficiently, the bottom heat became too strong, and the plants were in too direct contact with it. In cold days the house was in a perfect fog. It was ruinous to the plants. The remedy was simple: more heat must be allowed to escape from the tank into the house, without coming in contact with the sand-bed, and the moist earth of the plants. Another slate floor was laid, an inch above the tank slate, on which to put the sand and stand the plants. This hot air chamber opens into the house on the back and front side of the tank. Thus the whole radiating surface of the top of the tank may be directed into the house, or may be confined as bottom heat, as may be found necessary. By this plan, excessive humidity may be entirely obviated, and the heat completely controlled, as wanted.

Tanks are, beyond doubt, the cheapest method for heating houses,—far cheaper than iron pipes, at the present price for iron. But I think the method of using them has been expensive and imperfect, and upon a false theory. They should be used precisely upon the same principle as iron pipes: the whole surface should be exposed for radiation. If the heat is wanted as bottom heat, for purposes of propagation, it is simple and easy to confine this heat in a chamber under the cutting or grafting bed. If not so wanted, let it pass off with the utmost facility, as from pipes or a flue. Wood is a poor conductor of heat. I think slate the most perfect, and, in the end, much the cheapest material.

I would construct all my heating apparatus in the future as follows:—Bring the ground level for a foundation for the tank; stand bricks on edge at the distance of one foot apart, and running at right angles with the line of the tank. For a house of ordinary width, I should procure 24x12 inch slate. The length of the slate is the width of the tank. Place the slate upon the brick piers, breaking the joints, of course, upon each pile. Cement the joints with great care. Then lay a brick on edge on each edge of the slate, for sides of the tank. Cover with slate and cement carefully, as before, for the bottom. This tank has stood the test of time. If the work is well done, it will not crack or leak. I do not see why it should not prove to be as permanent as iron pipes, with proper care, and with one exception: it would be necessary always to guard it from frost. But simple heat and cold seems to have no effect to expand and contract, so as to cause leakage. Aside from the very superior radiating power of such tanks, I deem them less liable to crack, from change of temperature and humidity, than Mr. Hooker's tanks cemented upon the ground. But I do not doubt his tank can be made watertight with very little trouble.

Having made these free suggestions, for the benefit of those "to whom it may concern," will some one who has had experience with tanks, after the common method, state in what way the difficulty of excessive humidity is avoided.

OUR EXPERIENCE WITH SOME OF DR. GRANT'S GRAPES.

BY JAS. A. NELSON, MERCER, PA.

Having noticed of late considerable controversy in regard to Dr. Grant's *Iona Greely Prize Grape*, and I have been instrumental in distributing one of the Doctor's "new Extra Grapes," that since has proved not true to name, of course I must expect "comfort" from my customers for cheating them; I therefore have taken this method to explain the matter, and, at the same time, if this article should meet the notice of D. P. W., and others, they can see where the blame lies in their not getting the Anna Grape *correct* from me. Sometime in the spring of 1859, I met with a notice of Dr. Grant's "New Grape." I immediately wrote to him for his Catalogue of vines. In due time it came, and after examining the contents, I was very much taken with his new Anna Grape, from his high recommendation and the amount of praise he bestowed on it,—about equal to what is said of his Iona at present. I then sent on $3 for the Anna, and 50 cents for a ToKalon plant. In due time the plants arrived by Express; but, instead of a plant of ToKalon, as desired, he sent a Diana, stating it to be a better grape; but as I had the Diana on my grounds already, I did not want another of the same, as my purpose was and has been to get up an experimental orchard, for testing the different new fruits and vines, as they come to notice. However, I supposed I was very lucky in getting the vine of that "most splendid" Anna grape, so I was very careful in saving all the cuttings from it and distributing them, or in propagating them myself; but, behold, when the vine began to bear, what was it but the *Diana!* I then wrote to Dr. Grant, informing him of the mistake. In due time I received a reply, stating that my lines were received during Dr. Grant's absence, &c. After waiting some time for further explanation, I wrote a second letter in regard to the matter, to which I received the following note:

"IONA, near Peekskill, Westchester Co., N. Y.
November 13th, 1863.

J. A. Nelson—Dear Sir: Your letter of the 9th inst. is received. As you say the Anna sent proved to be the Diana, and as we wish to be *more than right*, we will send you by mail next week another Anna *free* of charge, leaving you the gainer of one Diana, equal in value, and more than equal in productiveness, to the Anna.

Very Respectfully, &c. C. W. GRANT,
Per H. P. B.

After paying $3 for a 50 cent vine, we will leave it with the public to say who has been the gainer.

The Anna mentioned in the above note as to be sent, never came; but I have got the variety since from another source, and as soon as we have cuttings to spare, will replace those sent out with the genuine, on receiving notice from those who got them.

My intention in placing this article before the public is not for the purpose of injuring the sale of Dr. Grant's New Grapes, for I wish him all the success he deserves, for his expense and loss of time in the improvement of the Grape; but this case proves that from our best establishments, sometimes may mistakes arise in sending out wrong trees and vines; and when once out, in the hands of different parties, perhaps all propagate from it, and eventually it becomes a considerable loss to the buyers of such stock. These facts, with others that have come under my notice while engaged in getting up an Experimental Orchard, have led me to believe that near about one-third of the fruit trees and vines are not true to name that are planted out annually in our section, particularly those trees that are bought from travelling tree peddlers; also in the way that our nurseries are mostly got up, by getting their stock and cuttings from others that have started up in the same way. Perhaps some of their varieties were not true to name when they began, and their cuttings and grafts may accidentally get mixed, and not having bearing trees on their grounds to test the matter, continue on sending out their spurious stock; and then, to increase the difficulty, the travelling tree peddler comes along, who, if disposed for dishonesty, can write any name on the labels of his trees that may suit his purchasers,—and as rogues cannot now go into any business, with a better prospect of making money, with as little risk of detection, as in tree-peddling,—the fraud is not discovered until the tree comes into bearing,—it explains the fact of so little of choice and rare fruit existing, to the proportion of trees that are annually planted out.

[Dr. Grant may feel disposed to accept the excuse furnished him by our good-natured correspondent, that "mistakes like this will occur in the best establishments."

The coolness with which H. P. B. writes that the old Diana is equal in value, and more than equal in productiveness to the new Anna, is refreshing to a hot novelty hunter. A curious thought creeps in here. Is the H. P. B. above, the H. P. Byram, formerly editor of the *Valley Farmer*, and now the principal "shower up" of the Iona practices? Is it possible that any one but a mere ignorant clerk could have written such a note, if a proper sense of propriety actuated him?

It begins to look as if H. P. B. and Dr. Grant well understood one another; and that the abuse of the Doctor is to turn out to be another splendid piece of strategy in the way of cheap advertising,—choosing the "blowing down" dodge, instead of the "puffing up" one. Talk about Barnum or Artemus Ward! Bah! They are but tyros at the business. Grant is "our prophet."—ED.]

The Gardener's Monthly.

PHILADELPHIA, FEBRUARY, 1865.

☞ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

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THE PHILOSOPHY OF GARDENING.

Not by any means the least argument in favor of the wide diffusion of a love of gardening among all classes of the community, is the philosophical spirit of enquiry it engenders and fosters in all who truly love it.

Science, in the abstract, is said to be a "dry study." To the school-boy it is usually worse than medicine; but when administered to him in the form of gardening, it ceases to be a bitter pill to him, by the sweetness that surrounds it.

It is a remarkable fact, that there is scarcely a single science but has some influence directly or indirectly on the theory and practice of gardening; so that in teaching the art to children and young persons, we are indirectly laying in them the foundation of that love of tracing effects to causes which is the distinguishing mark of the truly scientific mind.

In England, and other parts of Europe where gardening is a profession, the most intelligent class in the community comprises the gardeners. They will not be found perfect in all the arts, nor perhaps excel in any certain branch of science; but for what is known as general information on almost every branch of education; no class equals them. While studying the habits and wants of his plants, Botany, Chemistry, Physiology, Geology and Geography creep into his thoughts at every step. The birds, beasts, insects, and fishes, by which he is surrounded, and which will intrude themselves practically on his operations, introduces Ornithology, Zoology, Entomology and Ichthyology,—Hydrostatics, Hydraulics, and all manner of engineering thrust their theories on him, and Astronomy, Meteorology, and ologies of almost every character, insist on his lending an ear as well.

In the refinements of social life he is not behind. The Latin and Greek names of plants give him a taste for those languages; and French, Music and Drawing very frequently add to his accomplishments. His habits of reading and writing, and the polite society he necessarily mixes with, from a country squire to a crowned head, corrects his English; and his habits of analyses make him a good logician. A school-boy soon forgets what he learns. He has to depend on his memory for what his senses never knew; and consequently, like a copy of a daguerreotype, it never has the force possessed by the original.

Thus, all the knowledge of the gardener becomes practical. We are often told as one of the compensating points of this deplorable war, that it is educating our race. That men were never so bright, so energetic, so practical as now,—but all this is gained more happily, more effectually, more cheaply and more beneficently to the whole race, by the zealous pursuit of practical gardening. As we have seen, the true gardener is continually at war,—not in the shedding of blood, with all its ten thousand human miseries,—but with every element of nature, which is bound to bend to his imperious demands, and confess him to be their conqueror..

No nation can expect to enjoy every blessing. Ours, with its numerous advantages, political and social, over every other in the world, must not repine that this bright model class of gardeners, can have no place in this country as yet, as a profession. The few who get here find their services so poorly paid, and so little appreciated, that they very soon get into other more lucrative businesses, for which, so happily for the country, so numerously abound; and the mere cow driver, or horse jockey is left alone to the glory of the gardening *profession*. Or supposing he gets a place where he is well paid and appreciated, he knows not from day to day when his employer may "sell the place," which he professes to believe the "prettiest spot in the world;" when death may overtake, or some commercial disaster, so ruinous and so common, may fall to his lot, and he, the gardener, be driven to look for some other spot. Hence, unlike the English gardener, who, when he knows his business, is generally in a place for life, the American gardener takes *his* place merely as a stepping-stone to something better.

But—and here comes our compensation—the very cause which destroys gardening as a leading profession, gives us more amateur gardeners. Men who, anxious to excel in the arts and sciences, not only follow gardening as a pleasure, but as an enjoyment which, at the same time, brightens and quickens their intellectual part. In our good city of Philadelphia, there is scarcely an exception to the rule, that all the chief men of excellence in the

arts and sciences, are also distinguished as horticulturists. We have no doubt the same rule prevails everywhere; for why should it not?

To give an illustration of how gardening works on the intellect, let us compare the heating of a greenhouse with some of the every-day phenomena of Meteorology. When we apply warmth to water in a boiler, as the part near the fire warms, it expands, and becomes lighter; colder water then pushes in to replace it, as by the law of gravitation the heavier liquid will always lie at the bottom. This produces motion. The cold water forces the light warm water along the pipes, which cools, and, in turn again acts as an elevator, and circulator of the water warmed ahead of it. So circulation is continually kept up, as long as the source of motion—the heat—remains. The student in gardening soon begins to note other phenomena outside of mere gardening, and he notes that every thing is subject to the same law as water. Heat, conjointly with gravitation, is the source of all motion. The whole effort of life is to maintain heat. We eat and drink to sustain heat. When we lose heat we are *cold* and *still*, in every sense. The stomach is the furnace where we warm the blood; the heart is the boiler; the fluid as it is warmed, rushes from the extremities, where it takes the place of the warmed blood, which it propels to where it came from; as it approaches the extremities, it cools off, and again seeks its way to the boiler, to be warmed up again. All around through nature it is just the same. Were there no sun to warm it, the world would stand still,—the sea would be a stagnant pool and the air would be a dead calm. But with the Sun motion begins. The water of the ocean at the equator is warmed by the sun, just as the water in the boiler is warmed in our greenhouses; and in the same way it rises to the surface when warmed, and colder water from colder latitudes flows in to take its place. The warmed water then flows towards the colder latitudes, as the cold water is drawn from it, and thus the ocean currents are formed; and which, of course, are thus always found flowing from warm latitudes towards colder ones. The same phenomena are to be observed in the upper series of fluid, namely, the atmosphere. The air at the equator is warmed and ascends to the top; colder air from northern latitudes replaces it; which in turn is warmed, ascends as before, and flows towards the poles, and again returns, keeping up a continual circulation, precisely as in the hot-water boiler before alluded to.

As an illustration of the value of a study of horticultural operations to the mass of mankind, we may say, that this very subject of the circulation of water through garden boilers, first suggested to Maury the true theory of the Gulph stream, as we have detailed it,—and which is now so plain to every reflective mind, that it is never disputed now.

Although we only intended to illustrate the philosophical benefit of Horticultural practices to those engaged in them, by our allusions to marine and atmospheric currents, we may in conclusion remark that the practical uses of this theory are still in their infancy; and that the field of discovery is yet open for numerous investigators yet to distinguish themselves. On Meteorology the theory must have a decided influence. There is no reason that we can see, why the weather cannot be foretold as accurately as an eclipse. M. Arago, the celebrated French philosopher, it is said, came to the decided conclusion that it was impossible to foretell the weather; but men as distinguished in their day as M. Arago was in his, have pronounced many other things impossible that now seem plain and easy to us. To be sure, the flow of the warm air towards the poles, is not exactly like the boiler illustration, because the pipe or tank over which the water flows remains at rest; while the earth, over which the atmosphere flows is continually turning daily round, giving a sort of screw motion, instead of a direct motion to the warm air current from the equator. To one who has never wandered a foot over the earth's surface, but who perfectly understands this theory, it would be clear that he could safely predict that in some part of the world the winds would be always blowing in one direction, and a different course in another, and that there would be other places where dead calms would always prevail; and still again others where the flowing and returning currents would meet at about the same temperature, and consequently the winds would be continually changing, as one of the currents got a temporary ascendancy over the other. And when we turn to known facts, as developed in trade winds, tropical calms, and the changeable weather of our own temperate or mid latitude, we find that the prophecy would be perfectly safe and sound. And if we can safely predict in a general way, why not in the whole matter of detail, when every circumstance which governs these details shall be as clearly understood. Even as it is, much can be done and is done by those living in our latitudes, where the greatest changes must occur. A glance at the weather of the past winter will show how this is. Every one knows how rain and snow is formed by cold and warm currents of vapor coming in contact with each other. The heavy pressure of wind du-

ring the heavy storm on the North Carolina coast, early in December, forced the foggy vapor always existing over the upper part of the Gulph stream, over far into the land. The cold returning current from the north pressing against this column of fog, produced the dead calm of vapor we had for a week; as the force of wind up the stream died away, the pressure of the northern current lifted the fog bank, and snow was the result, with a northwest wind, and, after the vapor had been pushed pretty well away, clear and cold weather again prevailed. Before, however, many days had elapsed, the wind changed from a little west of north to east of north, and the vapor was again driven over us, though much more lightly than when the pressure was due east; and again we have another fall of snow. This and similar phenomenon have been the rule all the winter; the explanation of which, *after it has happened*, is perfectly clear. Why not then, by continuous observation, get from the effects to the local causes, in due time, as we have already done with the general principles? We see no reason why not. But we are going beyond what we marked out for our subject at the start, which was merely to show how a zealous love for gardening helps a philosophic spirit of enquiry in a way that no other pursuit does; so that, independently of the pleasures of gardening, and of the moral and beneficial influence so often and so universally claimed for it, not only the best interest but every interest of the race is assisted by gardening; and we may find in a contemplation of this fact, not only renewed encouragement to persist in our own enthusiasm for the art, but to endeavor all we can to convey a part of our own zeal to the breasts of those who have hitherto neglected it.

GRAPES AND WINE!

"It is much to be regretted," writes a valued friend, "that the ranks of the genuine Horticulturist should be saddled with a pack of mountebanks, who are disgusting the whole community with trickery and humbuggery, with no other aim or object but their own greedy ends." But this is to be expected,—and we must take the evil with the good. Wine drinking communities are saddled with its drunkards, as well as grape-growing is with its charlatans; and, in fact, the more popular a matter becomes, the greater is the effort of unprincipled men to creep into the current and control its course.

And it cannot be denied but that grape-growing and wine making have reached a point in the public attention they have never done before. Next to to oil, nothing is so much spoken of in the cars, on the street, by the roadside, everywhere, as the grape, and grape native wine.

On the latter subject, personally, we take little interest. So far as we are individually concerned, it is by no means a settled question, that the advantages of wine drinking are not more than counterbalanced by the evils all acknowledge to flow from it. But on this point it is not our province to touch. We feel on this question, at this moment, much as the philosophical hen-roost robber did. In the midst of a mighty haul, Sambo paused, and enquired of his comrade below:—"Julius, do you tink it is right for us to steal chickens." Julius replied, "Well, Sambo, dat is a moral question; we is on de business one now; please to hand down anoder chicken." And on this business there is no doubt the wine question is assuming an importance in a national and social point of view. If the history of wine could be fairly written, very much of the great progress of the human race could be traced to its influence. Grapes and wine have induced whole communities to emigrate from their fatherland, to settle on places more favorable to wine growth,—and here, in our own United States, very much of German emigration is to be traced to the influence which the capacity of the soil or climate for grape growing, has on the German mind.

In the wilds of New Jersey, and elsewhere, settlements are spring up like mushrooms, with the grape principally for the pabulum which supports their magic growth.

Not eight years ago, we hunted for specimens of wild plants over the spot where Egg Harbor City now stands, where then nothing existed in the shape of a house, but the deserted cabins of the wood-chopper. Last year, we found the spot where we expected to find our beautiful *Iris Virginica* in full bloom, occupied by a magnificent hotel,—and the 'city' to possess a population of perhaps 2000 souls, with its mayor, common council, and all the paraphernalia of a great place. "How do you like it here?" we enquired of a Teutonic specimen we saw fencing in a new lot on the outskirts. "Like it," says he, "we has as much land as we wants for to clear; we has the best Lager Beer in the United States, and makes as good wine as any in the world; and when we has all dese good tings to make us happy, vat more does we vant in dis world?"

The cultivation of the grape, and the production of wine, are so intimately connected, that it is almost impossible to separate them. For every one vine set out for the mere fruit, ten thousand will

be set for the wine; and with the great success, as compared with former years, that has attended modern cultivation, not even the disgust that some have taken at the course of certain grape speculators, will prevent the grape question from being one of the most interesting of horticultural topics for many years to come.

A correspondent, whose remarks we have had to defer till our next number, refers to the complete success of the grape in Philadelphia, over those partially failing in the outskirts of the city. We here regard it as the effects *of shelter from winds*, and consider this the *ultimatum* of success. We must have for the grape, either a climate naturally moist and hot, or make it so by shade and shelter from drying winds. The White Willow enthusiasm will do a little for grape growing in the West, by its slight protection against the winds; but it is like putting new wine into old bottles. If, instead, they would plant evergreens thickly all over the face of the country, it would add to its health and beauty; ameliorate the asperities of the climate, so unfavorable to grape growing; and enable the Great West to compete quite successfully with those in our city yards. That is the point, and here we leave it.

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.

INSECTS.—We print the following from our correspondent "Swift," in full, as many others have referred to the same thing, and we would like to make a few observations on these discussions generally:

"In the report of the discussion 'On the destruction of Insects in Plant Houses,' of the Pennsylvania Horticultural Society, as published in the January number of the *Monthly*, the statements of some of the members appear so confused and contradictory, that it is next to impossible tounderstand clearly what is meant. For instance, Mr. Hibbert, in his Essay, gives a remedy for destroying Thrip; and in the discussion he says, 'he would like to know some remedy?'

Again, he is made to say, 'Thrip has been very troublesome this year;' while further on he remarks, 'Last year had great trouble with thrip; this year none.'

In the last paragraph Mr. McQueen states that, 'He has found a perfect remedy for Red spider, in whitewashing the flue of the house, commencing about *ten feet* from the *flue*, etc.' Now, I cannot see what Mr. McQueen means; if whitewashing the flue is the remedy, why commence *ten feet* from the flue.

Surely this cannot be a correct report; if not, then who is to blame for putting in print such a confused account of a discussion which took place among intelligent practical men?"

In the first place, we have to say that the Pennsylvania Horticultural Society has not for some years published their transactions. We do not like to see so much very valuable matter confined to so small a circulation, hence we try to give at least the substance; but in the severe condensation we are obliged to submit them to, to suit our space, much of the spirit is unavoidably lost. No one not accustomed to the task knows the immense labor of condensations; and the more difficult the work, the greater the danger of imperfections.

In the present case, by referring to the original notes, we find that Mr. Hibbert said, "Thrip had been very troublesome this year," and that "he would like to hear what *others* had found *their* best remedy." This is very nearly what we said, though its meaning is somewhat different.

The error in Mr. McQueen's remarks is typographical; "ten feet from the flue," should read, "ten feet from the *fire*." This is necessary, or too great heat might make *sulphuric*, instead of mere sulphurous acid, and destroy the plants.

In conclusion, we would say to the society, you could not do a better thing for the members, than to resume the publishing of the transactions in full; and to the members who take part in the discussions, speak one at a time, address the chair instead of one another, attend to parliamentary rules generally, and 'speak out;' so shall the labors of the reporter be very much lightened, and much profit be derived to all interested.

PRONUNCIATION OF GLADIOLUS—"*A Philadelphia Subscriber.*"—"Not the least interesting feature of the *Monthly* to me is the scrupulous accuracy which seems to be its aim. To my boys, who, with a fondness for gardening add a delight in literary criticism, the *Monthly's* advent is always welcome. On the Gladiolus question you seemed to be right; but noticing your virtual abandonment of the point in the last number, by adopting the latin *Gladioli* for the plural of Gladiolus, it would be well to suggest that you give us a decided rule to go by."

[The term was not our own, but copied from a London paper, as per proper credit given. We still think that there is no more reason for giving the English word Gladiolus (for it is only on the question of using it as an English term that we have any thing to say about it) the benefit of latin rules, than there is in the case of Crocus, Polyanthus, Narcissus, Dahlia, Fuchsia, or hundreds of others. We do not say Croci, Polyanthi, Narcissi, Dahliæ, Fuchsiæ; not even in the pronunciation is the original word followed, for we do not use the German style 'Fewksia' for Fuchsia; and why we should do all this for Gladiolus, we cannot understand. It seems to us a species of literary Cockneyism on the part of the English papers not worth our imitating.]

Preserving Grapes for Winter Use—*S. W., Auburn, N. Y.*—The best way, we think, is to pack them in layers, paper between each layer, in clean boxes, and then stow the boxes away in a *cool* room, but not so low as to freeze. Before packing the grapes, we would advise letting them lie in a dry room a day or two after cutting. The sweating process will then guard against a tendency to mildew. Small thin boxes, that will hold about a half bushel, are best. Put a layer of paper at the bottom, then a layer of grapes, another layer of paper, and so on till the box is full: about three or four layers in all. There is less danger of moulding in small quantities, than when larger boxes are employed; and if mould should get into any one box, a less quantity is spoiled. Grapes put up this way will, we know, keep well till February, and possibly longer. The Diana is the best grape for keeping over.

Change of Firm.—It will be seen by our advertising columns, our correspondent, Peter Henderson, has "taken unto himself a partner," and sails in future on the commercial sea, as "Henderson & Fleming." The readers of the *Monthly* have been considerably indebted to Mr. H. for many valuable ideas, communicated through our pages. May the new firm have fair winds and a smooth sea, and arrive at last in a safe harbor, laden with a cargo equal to its most golden expectations.

Pears for Orchard-houses, &c.—*C., St. Johnsbury, Vt.*—"Please give me a list of the best early Pears for Pot culture in Orchard-houses; best 4 and best 6, to be grown on Quince stocks."

[Orchard-house culture of Pears has hitherto been confined so entirely to the other side of the Atlantic, that beautiful, and no doubt profitable as fine Pears, obtained earlier than they would be in the open air, might be, we cannot give a list from experience. The four we would try, are Bartlett, Flemish Beauty, Duchesse d'Angouleme, and Louise Bonne de Jersey. Six for the open air on quince, in addition to those named, Doyenne d'Ete for an earlier, and Lawrence for a later variety.]

Graperies—*J. W. H., Louisville, Ky.*—"1. Is the new curvilinear roof best and cheapest, as represented by its advocates, or is the old sash roof preferable.

2. If the new style is best, please state what size and quality of glass is best for such; and whether it is curved in accordance with the curve of roof; and also what will be the cost of such glass."

[(1). Curvilinear roofs are neither best nor cheapest for graperies. They are usually prettier: in this lies their chief claim.

(2). The glass for these is generally used slightly curved to suit; but it need not be. The common window glass will do when properly bedded, and very narrow laps to the glass employed.]

Pruning Evergreens—*E. M., Harrisburg, O.*, writes: "I was much pleased with the remarks about pruning evergreens at Bloomsdale, by Walter Elder, in your last number. Can you not give us a full description of the best methods to employ. How is it possible to prune Pines, to make them grow thick, without killing them? Can shoots be made to push from old canes without eyes? I am afraid to touch some of my choice specimen trees, until I know for certain they can be benefited."

[An essay on this subject will be read before the Pennsylvania Horticultural Society this month, which, probably, we shall find room for in our next issue.]

Death of a Nurseryman.—Mr. David Griscom, well known as the proprietor of the Woodbury Nurseries, in New Jersey, near Philadelphia, died on the 6th ult., at the age of 50 years.

Grafting Pæonia moutan—*J. H., New Philadelphia, O.*—"Which is the best time to graft Pæonia moutan (Tree Pæonia), what kind of roots to graft on, and what is the after treatment? Will they grow from cuttings readily?"

[They are grafted on pieces of roots, from the tuberous-rooted herbaceous kinds. Take the young wood when three parts ripe, and either whip or cleft graft each piece on a tuber. Then put in a moist bottom heat. We have heard of their uniting this way, when set in the open ground instead of a hot-bed or greenhouse, but we do not know this to be a well ascertained fact.]

Rustic Fountain—*J. F. E., Albion, Mich.*—We do not remember to have figured any thing of the kind referred to. A very pretty one may be made of common building stone, set together with common mortar in any fantastic rural, or rustic design that may suit the taste of the builder. After this, the whole is washed over with very thin cement, made like whitewash; after it is finished, the whole looks like one solid piece of stone.

Letter from Hon. M. P. Wilder.—We give the following publication, knowing that it will very much gratify the numerous friends of the distinguished Horticulturist:

My Dear Sir: I enclose my subcription to your paper. I am unable to read much myself, but I have the *Monthly* regularly read to me, and feel the same strong interest in it and rural affairs as ever. My health is slowly, but my physician says, *surely* improving. I hope it may prove so, and that my mission is not yet ended.

Marshall P. Wilder.

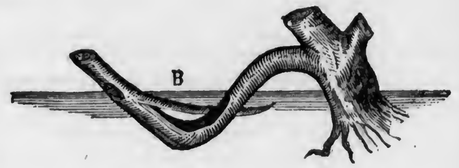
Dorchester, December 28th, 1864.

Goodrich's Seedling Potatoes.—We are pleased to see so much attention given to these Seedlings. With a disinterestedness of purpose very uncommon in these latter days, Mr. Goodrich pursued his studies and experiments to a very useful and successful end.

As is quite common with good and modest men, his services to horticulture were not fully appreciated during his life; but it is a source of satisfaction to the community, for whom he did so much, that his family will receive some recompense by the sales now in progress, which warm-hearted friends are insisting on their acceptance.

Propagating Lemon Verbenas—*H. W. Fishkill, N. Y.*—"Will you please inform me, through the *Monthly*, the best way to Propagate the Lemon Verbenas. I have tried it in the summer time from young wood in a propagating-house, and under glass, shaded from the sun in sand, with indifferent success, not growing more than five out of twenty-five. Please inform me my mistake."

[The surest way is by layers. Plant out a few strong plants in spring, in rich garden soil. Cut them down to the ground. In June layer the strong youg shoots that spring up. If cut on the under side as usual, they will snap asunder. We have before shown how to do this, but as it seems forgotten, we give again an illustration of how this is done:



Azaleas—*W. W., West Roxbury, Mass.*—"I should be much obliged if you will inform me how to manage Azaleas. Mine rusts at the ends of the leaves."

[Most probably they have been over-potted or over-watered, which practically means the same thing. Whenever the points of the fibres get injured, the points of the leaves are the first to suffer. If a pot is not well filled with roots, and yet the soil be frequently watered, the soil becomes "sour," as the gardeners say, and the fibrous roots get generally injured. If the pots be well filled with roots, and water is too sparingly given, the same effects often follow.

The best way to recover such Azaleas is, to keep them rather dry, until the new leaf buds are about to push; then take them out of the old soil, and repot into clean pots, and be particular about the water until the roots are pushing very freely.

No apology is necessary for making the enquiry. We are always glad to notice whatever may be of interest to others as well the enquirer.]

Salter's New Pyrethrums—*W. C. C., Waltham, Mass.*—We are not sure that these can be had yet in this country, but think it very likely that some one of our advertisers will have them to offer through our pages this spring. We find, as a general rule, the new plants we notice from foreign journals through our columns, are usually for sale by the most enterprising of our nurserymen, within a year or so after our notice.

What is the best way to Destroy Scale on Ericas—*J. C. W., Fishkill, N. Y.*—Make a weak solution of Gum or Glue, with soapsuds heated to 100° or 110°, dip the plants in it, inverting them of course. When dry the gelatinous matter will peel off, bringing the scale with it.]

Strawberries.—*G. B., Atchison, Kansas.*—"Can you tell me what six varieties of Strawberries, of late blooming varieties, pistillate, are most profitable for market use, to plant. Early blooming varieties will not do here."

[We have full notes from two of our most extensive Strawberry growers,—Mr. John Saul, of Washington, and Mr. Knox, of Pittsburg,—in answer to this enquiry, which will appear in our next.]

Trowbridge's Grafting Wax.—Samples of this are on our table, from Mr. Trowbridge, and it seems to be a very useful article. To amateurs especially, to whom it is of importance to have every thing 'handy,' we should judge the article will be particularly valuable.

Work on Rose Growing.—*C. P., Springfield, Ohio.*—"Who has the best work on the culture and propagation of the Rose?"

["Buist on the Rose," is the best American work on the subject.]

Strychinine for Mealy-bug.—*W. C.* observes: "Your correspondent says, '3 ounces of strychnine for killing Mealy-bug,'—a very careless and wholesale way of speaking about such deadly materials. Has he not multiplied by 480?"

New or Rare Plants.

Lychnis senno.—We are happy to introduce here the following remarks on this plant, with which we have been favored by its introducer, Mr. Fortune:—"*Lychnis Senno* (Siebold and Zuccar), is one of the most common garden plants in Japan. It is a favorite with farmers and cottagers, and is very showy and handsome when in bloom. There are three very distinct varieties; one has red flowers, another has white ones, and the third has red flowers with white stripes. The specimens which have bloomed in England have given but a faint idea of the beauty of this plant; they have been wanting in that depth and richness of color which they have at home. When the plants are more naturally and slowly grown, the old colors will probably return—that is, the red will become deeper, and the stripes of a purer white and more clearly defined. It blooms in the end of May and in June. Senno is the name it is known by among the Japanese, and hence Siebold and Zuccarini have adopted this for the specific name in their 'Flora Japonica.' Kæmpfer and Thunberg both describe the plant, but, erroneously, refer it to *L. coronata*, which is quite a different thing.' —*Florist and Pomologist.*

A New Osage Orange (*Maclura trivuspidata*).—This new species was introduced into the Paris garden of the Museum from China, in 1862. It is described as a shrubby bush, very branchy, and spinose. The leaves are leathery, shining, and three-lobed, as shown in the following illustration:

It is hoped by the French that it will seed abundantly in France, and thus, not only by its golden fruit, add another great ornament to their shrubberies, but also "prove most precious" to make impenetrable hedges.

As every thing relating to hedge plants has a special interest to Americans, we trust some of our importers will try to introduce it for us.

New Annuals.—*Godetia reptans (?) alba.*—A charming trailing perennial, running close upon the ground, producing blossoms in the greatest profusion, especially in the second year of growth; color similar to that of the beautiful Godetia roseo-alba, viz., pure white, with a crimson blotch at the base of each petal. We think this flower will be found admirably adapted for rock-work, baskets, and banks, and being a perennial, it increases in beauty each succeeding year. For decided novelty, prettiness, and general effect, we consider this one of the best introductions of late years.

Gilia minima cærulea.—Another interesting addition to this numerous and pretty race of flowers; color pale blue; height 3 inches.

Œnothera parviflora.—A very neat small-blooming variety, totally dissimilar from any other.

Collinsia corymbosa.—A Collinsia of an eccentric and peculiar character, blooming in a corymbose or disc-like form, whereas all the other varieties are pyramidal; color pale lilac.

Œnothera diversiflora.—Another beautiful variety, producing its flowers sometimes white, sometimes rosy pink of various shades, but always with a crimson blotch at the base of each petal; extremely pretty.

Raphiolepis (Photina) ovata.—This distinct and ornamental hardy evergreen shrub, is recommended as a valuable addition for out-door planting. It was sent from Japan by Mr. J. G. Veitch, who describes it as growing from 8 to 10 feet in height, and forming a very handsome evergreen. Its foliage is large, ovate, and of a dark glossy green color. It also produces spikes of white flowers, 3 to 4 inches in length.

Domestic Intelligence.

The New Tomato: "The Cook's Choice."—The new variety of Tomato, lately introduced by Mr. H. A. Dreer, seedsman, of this city, and named by him "The Cook's Choice," is a superior kind compared with other varieties. The plants grow thrifty and are very fruitful, and ripen their fruit a fortnight after the Extra Early; the fruit is uniform in size and shape, never exceeding four inches across, and one and a half inches deep, and never less than three by one and a quarter inches. The form is what gardeners call a *tomata shape*, perfectly round, flat above and convex below; color deep shining scarlet; skin very thin; seeds few and small; inside all flesh, very melting and buttery, sweet and finely flavored; the core is as melting as other parts,—indeed it has no core; the juice is all absorbed in the flesh, and is very thick and elastic. The apples are all free of deformities and inequalities, and do not rot so readily as other kinds do in wet weather, and late autumn. They make a thick and starchy stew, and have to be cooked over a slow fire. Catsup made of this variety has to be put in jars, as it is too thick and elastic for bottling. In eating the raw apples, they taste sweet and melt in the mouth. They are much richer than other varieties.—Walter Elder, *Philadelphia.*

Heating Value of Different Woods.—The following is set down by competent judges as the relative heating value of the various kinds of American woods used for heating purposes or producing steam:—Shellbark Hickory, being taken as the highest standard, 100; Pignut Hickory 95; White Oak 75; White Hazel 72; Apple 70; Red Oak 69; Black Walnut 66, White Beech 65; Black Birch 62; Yellow Oak 60; hard Maple 59; White Elm 58; Red Cedar 56; Wild Cherry 55; Yellow Poplar 52; Butternut 52; White Birch 49; White Pine 42.

California Raisins.—The curing the grape, and the making of Raisins, is destined in coming years, to become a great branch of trade. Several parties have made more or less Raisins the past two years, and have shown them at our Fairs. The Raisins thus made have been found to be superior to those imported, being fresher and containing the full rich flavor of the grape, which is almost all lost by long voyages of importation.

When at Folsom, recently, we called on H. M. Bugbey, Esq., who has been very successful in making Raisins. We examined and ate of this year's crop, and received a fine parcel of clusters. The process of curing adopted by Mr. Bugbey, is as follows:—He makes a frame work, near the vineyard, over which he places laths, making a wicker-work frame, on this he lays straw paper. The grapes must be *thoroughly ripe*, when they are gathered and laid,on this paper; in *ten* days they are turned over, they will then flatten, and the work is done. The frames are protected from birds, bees, etc., by musquito bars. After they are thus cured, they are packed in large boxes between layers of papers for a brief time, then finally packed and sent to market. Mr. Bugbey made 1000 pounds in 1863, and will cure 5,000 pounds the present year (1864); he also made 6000 gallons of wine.

The vineyards of Mr. B. are the Natoma Vineyard, which has 32,000 vines, and the Duroc Vineyard, of 17,000 vines. These Raisins are much superior to imported fruit; and we can always have them four to six months earlier than any can be imported. This is a branch of business that should be encouraged. Mr. B. has been very successful.—*California Farmer.*

Foreign Intelligence.

AUCUBA JAPONICA VARIEGATA BEARING BERRIES.—No one who had the pleasure of seeing the plant will have forgotten the interesting and handsome specimen of Aucuba japonica vera, covered with its brilliant scarlet berries, which was exhibited by Mr. Standish, of Ascot, at the first spring meeting held at South Kensington, on the 9th of March last. Few plants, if any, ever received such unanimous and well-merited approbation.

It has been the only new plant of the year which has been signalized by having the Society's Silver Floral Medal awarded to it. For this addition to our ornamental shrubs, we have to thank Mr. Fortune, who introduced it into this country, with many other very valuable Japanese plants.

At the time when this fruit-bearing Aucuba, it being a female plant, was introduced, the stamen-bearing or male plant was brought with it, by the fertilizing powers of which we were promised in due time to be able to make the well-known Aucuba japonica variegata, which is a female, a fruit or berry-bearing plant. The promise then made has been fully realized; and a fine plant of our old friend Aucuba japonica variegata, 8 or 10 feet in circumference, can now be seen in Mr. Standish's nursery at Ascot, well covered with berries, which, though at present green, are fast showing symptoms of the approaching change to bright scarlet. The plant which is now producing its berries, was temporarily planted in one of the Vine-houses, for the purpose of being experimented upon. It is truly most interesting and gratifying to all true lovers of horticulture, to see the perfect success attending the fertilization of this plant.

The time is not far distant when the male or pollen-bearing plant of this shrub will be attainable by all; but at present few only possess it, the value being so great and the stock very limited. In the meantime we may anticipate the privilege of seeing these shrubs, which grow so luxuriantly in every situation in this country, and which are so ornamental by their variegated foliage, covered at Christmas (a rival with our truly-loved English Holly) with brilliant scarlet berries.—*London Cottage Gardener.*

HISTORY OF COTTON—*By Major Trevor Clarke.*

(*Continued from page* 26.)

Old as our subject is in India, it can boast as high, and probably a higher antiquity in the Western world; and the botanical genealogy of the Occidental plant is far more inscrutible than that of the Oriental. Columbus found it in the West Indies, Magellan in Brazil. Ferdinand Cortez found the Mexican Court clad in Cotton; and presents of it were brought home by the gorgeous and cruel buccaneer to his Imperial master—better had they not been stained by the blood of Montezuma!

Cotton, both in its raw state and beautifully woven, has been found in the ancient Peruvian tombs.

The Indian plant, however, appears to have been first cultivated by the British colonists in America prior to the French Revolution, before the high qualities of the indigenous Mexican form, so close at hand, were known. Cotton was grown on a limited scale in Maryland in 1736, by Miss Lucas, daughter of the then governor of Antigua 'Again a lady! No conjured vision now, but an enterprising English girl. Listen to her journal: "July 1, 1739.—Wrote to my father to-day on the pains I had taken to bring the Indigo, Ginger, and Cotton to perfection, and that I had greater hopes," &c.

In 1775, just before the Revolutionary war, the Southern States of America had begun to turn their attention to Cotton growing, and the cultivation of 33 acres, by one person, of "Green seed Cotton," probably the Xylon americanum præstantissimum semine viricente, of the old botanist Schwartz, was considered a great feat in those days. After the peace in 1783, the independent spirit of the Americans was directed more to their own manufactures at home, than to their exports or their imports, and Mr. Madison expressed his conviction that the United States, in the extensive regions south of Maryland, would certainly become a great Cotton country. Shortly after, an American gentleman came to England to purchase machinery. British law then forbade its exportation. So a Mr. Slater, who had been Arkwright's pupil, carried off the fruit of his master's brains to America, and working from recollection, his plans and models having been seized, made the first Cotton machinery ever used or seen in the United States. In 1784, eight bales had been shipped to Liverpool, and seized at the Custom House as an illicit importation of British colonial produce, but were restored to the consignees so soon as it was discovered that so "large" a quantity of Cotton could be grown on the American continent. Exportations have continued from that day to this. But enough of dry history; let us get to the botany.

I must now refer you back to a remark I made, perhaps a flippant one, but I am sure excusable in the case of any one who has painfully floundered through the subject as I have, "that the botany of Cotton was impossible." It is not alone I that have said this thing. Better men have given it up in despair, quieting their consciences by lumping the whole family with its numerous and undefinable clanships—into two or three specific heads, leaving even these to fight it out like the cats of Kilkenny, till nothing be left to tell the tale, and one Gossypium, genus and species, be left alone in its glory.

All are agreed that the genus is good in law, but the specific differences are so slight, and the seminal variation so great, that botanists have always been in a perpetual puzzle on the subject; and what is worse, they seem to have shaken up their specimens and descriptions in one bag, and their names in another; put them together at random, and returned them to their herbariums to puzzle posterity. Linnæus admits five species; Lamarck follows with eight; Poiret describes four more; Roxburgh adds two more, and with reason, as they would appear to be stirpes or really wild forms; De Candolle enumerates, not insists upon, thirteen, and rests upon his oars, quietly remarking that all were uncertain, and that no genus more required the labors of a monographer, who could describe them from living specimens; and I believe our own Lindley is much of the same opinion. The distinguished botanist and traveller, Dr. Welwitsch, adds another undoubted wild species, G. microcarpum Welw., from the district of Mossamede, near Loanda, in Western Africa. I shall have the gratification of being able to possess a specimen of this very curious plant, as a present from the discoverer of Welwitschia mirabilis.

I need not say that the popular accounts of the plant present an amount of error and confusion past all understanding. But there is reason and excuse for all this. Cotton is a domesticated plant, and has been so through unknown ages, in every part of the world where the climate would bring it to perfection. What the Caninæ are to the Zoologist; fowls and pigeons to the Ornithologist; cereal grain, Potatoes, Pinks, and Polyanthuses is to the farmer, gardener, and florist; this has Cotton been to the Botanist. Naturalists know that no two reproductions of animal or vegetable life are exactly alike. However slight it may be, each has an individuality more or less visibly stamped upon it. This disposition to sport, as it is termed, is enormously increased by cultivation, by which I mean, rich food and immunity from disturbing influences.

Upon any plant weeded, watered and manured, fenced in and fostered by the hand of man, Nature rings her wierd changes with unbridled energy, and in no case more curiously than in the genus Gossypium. What are or were the countless Gossypium legionaries, Uplands and Lowlands, Sea Islands and Bourbons, long staples and short staples, with the botanical hirsutums, glabrums, vitifoliums, and latifoliums of the West? what the albums, nigrums, rubrums, and purpureums, palmatums and tricuspidatums of the Eastern World? They are mastiffs, greyhounds, pointers, setters, pugs, poodles, and turnspits, Taylo's Bright Venuses, and Buck's George the Fourth's, White Talavern, and Brown Lammas, beautiful man-made monsters, fair to the eye and good for food and raiment, and other wants of the world, but inscrutible as to their origin, and a stumbling block to systematism?

But it is time to get to work—*Loquitur* Royle.

The genus Gossypium is distinguishged, that is from other Mallow-worts, by having a double calyx, or in other words a simple calyx, supported externally by three leaf-like bracts, forming an involucre, and a three to five-celled capsule, with seeds immersed in the wool-like substance, so well known by the name of Cotton. Space compels me to refer to Royle and other reliable botanists, for the general description.

Slight as are the real specific distinctions, in the strict scientific sense of the word, there is an outward physiognomic difference between at least two great and important races of the plant, to wit, those of the American and those of the Asiatic continent, which no person, however slightly acquainted with plants, can fail to observe. And this outward appearance is accompanied by an equally great and important difference in the commercial product. We will first take the American forms. These, according to the best and last authorities, are but two in species, far the greater part of them being derivations of one Gossypium barbadense.

They are handsome, more or less, short-lived trees, biennial or perennial in warm climates, annual wherever a true winter ends the year. The Bourbon plant is generally received as a type, varietas princeps of the species. It is supposed to be indigenous to the hottest regions, the Terras calientas of Mexico, whence it was taken to the Isle de Bourbon, Anguila in the Antilles, the Mauritius, and finally to Barbadoes; and these islands were undoubtedly the Nurseries from whence came the stock which supplied plants to the Cotton producing States of America. The varieties into which this species runs, take their peculiar forms, and qualities of staple, from the various aspects, soils, sites and altitudes, in which they have been cultivated. Some of these variations are extremely curi-

ous, as in the case of seed, which in the same sort varies from a smooth black naked grain, parting from the wool with a very slight pull, to a distinct looking form, covered with a short green or brownish nap, to which the tufts of available fibre cling with more or less tenacity. The celebrated Sea Island plant is the form taken by the Barbadian type when transferred to the warm, moist climate, and rich low-lying lands on the Georgian coast, and in the adjacent islands. The fibre is long, strong, and of the highest excellence. Cultivated in Egypt, it retains its properties, to a certain degree; is a good, useful, long cotton, and is much used for the same purposes. The appearance of the plant is slightly modified by the climate.

Uplands, or short-stapled Americans (not Surat) now includes, according to Royle, the produce of the interior and upland country of Georgia and Carolina, as well as of Alabama, Mississippi, Louisiana and Tennessee—Bowed Georgian, as it was once called, from having been first cleaned by the Indian contrivance of a bow and string, flicking the fibre from the seed. Just now the fashionable sort is called the Mexican Gulf Hill seed. I am indebted to the Cotton supply Association for a sample of this. Three seeds of it produced me three very different looking plants. One nearly approaching the type, with glabrous foliage much angled and divided. Another with hirsute strong branches and more spreading habit; and another with the most remarkable foliage of any I have hitherto seen of its race: the lobes, especially the central one, are so long as to give the leaf almost the palmate appearance of the Indian plant, and the individual lobes are also curiously divided. The seed was peculiar and different from the rest, in being very small and nearly clean or naked. There is a sort called Little Mexican, or Petit Gulf; I think this may be it. Venezuelan seed, also from the Association, resembled this. The plants, however, were like the Gulf seed, but a little more hairy. These were all sown very early this spring.

(To be continued.]

Best White Grape.—Of the white Grapes exhibited, the White Muscat of Alexandria must still rank at the head; for although the Cannon Hall Muscat is larger, both in bunch and berry, yet it is not so rich; still it is a noble looking grape, and well deserves cultivation, but by no means to the exclusion of the old sort. The Royal Muscadine is a good bearer, and can be grown where a less degree of heat can only be afforded than that which the Muscats require. Reeves' Muscadine forms a compact bunch, will succeed in the same temperature as the preceding, and is deserving of cultivation. Of the old and deservedly much esteemed White Frontignan, good bunches were exhibited; and there were very fine bunches of the Golden Hamburgh. The White Nice is not reckoned first-rate as regards flavor; but its bunches are large, hang long, and are sometimes ripened to tolerably good flavor. The Blussard Blanc is a wine Grape. The Raisin de Calabre is good looking, hangs long, and is sometimes desirable and useful on account of these properties; in quality it is tolerably good, but not rich.—*Gard. Chronicle.*

Dwarf Pears.—We are much amused at the great change that has come over planters. Twenty years ago gardeners all decided that planting Pears on Quince stocks and root pruning were charlatanish, and to be avoided by all sound thinking men. Twelve years ago they said the same of orchard-houses. The tables are now turned; the demand for such trees has always been large, but this season, we understand, it is beyond belief.—*Chronicle.*

Picea Reginæ Amaliæ.—Dr. Seemann, in the *Gardener's Chronicle*, (1861, p. 755) has recorded the discovery and history of this so-called species. With all humility we confess ourselves compelled to differ from Dr. Landerer's opinions as given in the article just referred to. We have not seen the flower, and therefore we speak under reservation of what it may show; but we have seen all the other parts, and have come to a diametrically opposite conclusion. The most of the distinctions pointed out by Dr. Seemann do not occur in the specimens we have received—the leaves are not there more sparse than in P. Apollinis. The cones are no doubt only about 6 inches long; but so were the cones of P. Apollinis, sent along with them. The only differences we have been able to detect between it and that species are, that the leaves are thicker and shorter, and more pointed—as much pointed, indeed, as in P. cephalonica; but the termination is of the same character as in P. Apollinis, viz., bevelled off from behind, whilst in P. cephalonica it tapers to a point, nearly as much from before as behind. The disposition of the rows of stomata is the same as in P. Apollinis; the leaves are the same. The cones are a trifle more slender, but the scales and bracts are the same; and so are the seeds; at least, if there is any difference, it is of the most trifling description. The wing is longer and larger; but this is a character often varying according to the size of the cone, as well as the part of the cone, from which the seed comes. We do not think the habit of second growth, even although it were special, and confined to the plants found in the district whence this variety comes, can be relied on as a specific character, and we doubt whether the same habit may not be found under particular circumstances in the allied species. For instance, in this country, Picea cephalonica, when injured either by frost or otherwise, shows a similar tendency. We therefore place ourselves in the ranks of those who do not consider this a good species. We view it as a variety of P. Apollinis.—*Chronicle.*

Grafting Coniferæ.—Conifers are grafted, it appears, with very great success at Castle Kennedy; the grafted plants, of which large numbers have been used, being quite equal in symmetry to those raised from seeds. By adopting the plan of wedge-grafting, it is found that all danger of damage by wind is avoided, and in a short time the point of union between stock and scion becomes scarcely discernible. Mr. Fowler has, by this means, been enabled to furnish the grounds at this fine place with handsome plants many years sooner than it could have been done by means of seedlings. The grafting of Conifers, as observed by a northern contemporary, has sometimes been condemned, but any one who sees what has been accomplished by it at this place, cannot fail to be convinced of the soundness of the practice.—*Chronicle.*

Retinospora obtusa.—Since the summer growth has perfected itself, or even before then, the plants have become of a pretty golden yellow, quite as much so as Thuja aurea, in its best state in spring or early summer, and the appearance is certainly more handsome than the Golden Yew is at any time. I now ask if this is the usual character of the species, and if not, whether this feature is likely to become permanent? If so, the tree will be a great acquisition to our shrubberies and elsewhere.—*London Cottage Gardener.*

Best Black Foreign Grape.—The varieties of Grape-vine which are mentioned in the following form a part of the large collection which exists at Chiswick. The best for a general crop among the black sorts is unquestionably the Black Hamburg, and especially that variety of it called the Frankenthal. The Dutch Hamburg is larger, but comparatively coarse, and is by no means to be preferred. The Muscat Hamburg is esteemed by those who like the Muscat flavor; its bunches and berries are improved in size by being grafted on the Black Hamburgh, on which it also sets better. The Esperione colors well, being of a bluish black; but we observe that under this name the true sort is not always met with. The Black Prince is well deserving of a place in a collection; some remarkably fine bunches of this old variety were exhibited in the past season. The Morocco Prince, said to have been raised between the Black Prince and Black Morocco, has a sprightly flavor. Burchardt's Prince is capable of being grown to a large size, but it requires rather more heat than the Black Hamburg to develop it in full perfection; it hangs well, forming a succession to the Black Hamburg varieties. The same may be said of the Black Morocco. As a late sort, Oldaker's West St. Peter's must be reckoned very useful; although not so large as the Black Barbarossa, its bunches are more compact. Lady Downe's Seedling is perhaps the best for flavor, and it produces handsome bunches of a fine black color. Catelenesia Nera has tolerably large bunches, black as its name implies, but the berries are not sufficiently large. The Black Monukka forms a large bunch, with berries not very large, but stoneless; this being the case, it may become valuable as a stoneless raisin Grape in those countries or colonies which possess a climate sufficiently hot and dry for rendering the fruit an article of commerce.—*Gard. Chronicle.*

Horticultural Notices.

PENN'A. HORTICULTURAL SOCIETY.

STATED BUSINESS MEETING, JAN. 17TH.

The newly-elected President, D. Rodney King, in the chair.

[It is with a lively satisfaction we note the election of this distinguished gentleman to the Presidency of this society. The very name augurs one of the most successful administrations. Whatever Mr. King takes hold of is eminently prosperous. It is to him our readers are chiefly indebted for whatever pleasure they derive from the *Gardener's Monthly.* The idea originated with him of a cheap horticultural magazine, with the single purpose on his part of the good of horticulture. Solely by his encouragement, the present publisher undertook it, generously allowing his name as a well-known horticulturist, to stand responsible for its success during its infancy. It was only the repeated urging of Mr. King that induced the present Editor, after many refusals, to undertake its management. It

stands to day a monument of his disinterested zeal, such as our poor endeavors can make it.

As Major of a regiment of Philadelphia reserves, Mr. King deserves no less of his country than of the horticultural community,—keeping the field for months during the invasions, leaving a business employing hundreds of hands, to go on as best it could.

And now, not beating his sword into a pruning hook, but laying it by for days of more imminent peril, at the unanimous request of his associate members, he leads them on to reap new laurels. We trust he will be energetically supported in the chair, and that the society, with new zeal, will enter on a career of increased usefulness.]

The Committee on Plants and Flowers reported the award of the following premiums for the Display of January 10th. :

The best general display of plants to E. Hibbert, gardener to Fairman Rogers, Esq.

Best basket Cut Flowers, to Donald McQueen, gardener to Joshua Longstreth, which was one of the most tastefully arranged ever exhibited before the society.

Best pair Hand Bouquets, to F. O'Keefe, gardener to Joseph Harrison, Esq.

Jacob Huster, gardener to Edwin Forrest, exhibited a pair of light-colored Bouquets, which were particularly commended by the Committee.

Best Hanging Basket, to E. Hibbert. This was filled principally with the beautiful fern Phlebodium glaucum, and is one of the best things for this purpose, where space can be afforded it.

There was a pretty basket in the room, in which Ficus repens was the chief attraction, from F. O'Keefe.

To Jacob Huster a special premium of $1 was awarded, for Chinese Primroses. They were not better grown than usual, but were very beautiful varieties, of many shades of color, between white and rose: striped, speckled, etc. The same exhibitor had a very nice collection of Dwarf Cinerarias, which attracted much attention.

The most remarkable objects in this exhibition were two magnificent specimens of Cypripedium venustum, and C. insigne, from John Pollock, gardener to Jas. Dundas. Each had scores of flowers on it, and was a sight in itself worthy of any member of the society going to see. They had a special premium awarded them.

The Committee on Vegetables awarded:

For the best Celery, to Thos. Meghran, gardener to Col. Owen Jones, but which was not equal to former productions of the same exhibitor.

Best Lettuces, to Jacob Huster. The Early Butter variety, and very good for the season. The same exhibitor had a special premium for Red and White Turnip Radishes, very superior for January, and creditable to his skill as as a gardener.

The President delivered his inaugural, mainly making suggestions for the increased usefulness of the society.

Acting on his suggestions, several resolutions were put and adopted. One of them recommended to the Committees that their reports could be made of more value to the public, by giving more details and reasons for their awards; another voted thanks to the London Royal Horticultural Society, for a set of their transactions, and, as since the burning of the Chinese Museum, when our own series was broken up, and for the present discontinued, a full set of the Proceedings of the American Pomological Society should be returned for their favor; another that the interest of Horticulture would be promoted by having auxiliary committees outside of Philadelphia proper, whose duties should be the interest of Horticulture, holding suburban exhibitions, etc., under the auspices of the society. As a trial, Committees were appointed for Germantown, and West Philadelphia.

A resolution was adopted on building a new Hall, which should be at once a credit to Horticulture and an honor to Philadelphia; and a Committee was at once appointed to go to work, and another to petition the Legislature to amend the Society's Charter, so as to permit of its owning real estate to the amount of $200,000.

Another resolution requested the Finance Committee to consider the expediency of changing the balance of the society's investments to Government bonds, of which the society already holds largely.

Many new members were elected, and the meeting adjourned, satisfied that the Pennsylvania Horticultural Society, although the oldest of its race, should not be the least energetic, by any means.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA

By an advertisement in another column, it will be seen the Annual Meeting will be held at Lebanon, on the 14th of February. Judging from the past meetings of the society, every fruit-grower in Eastern Pennsylvania, who takes an interest in the improvement in his favorite pursuit, will find it to his interest to attend. Rev. Mr. Colder, of Harrisburg, is the new President of the society.

ILLINOIS HORTICULTURAL SOCIETY.

This body is in session as we write. The following notice we abbreviate from the *Prairie Farmer*, so far as they have gone :

Mr. Minier remarked : There are two objects to be attained in sheltering trees on the prairies. The first is for summer protection, and the next is for winter protection. Some think they are not necessary except for winter protection, but I think they are absolutely necessary for summer protection. It strikes me, sir, that we can modify our storms, our climate, our atmosphere. I need not tell you that trees will add greatly to the convenience of a place. They add very largely to its money value.

The Silver-leaf Maple, I think, is better than the Cotton Wood. It usually ripens in this section about the 20th of May. This tree is easily raised, and produces more fuel than the Cotton Wood. It will do for fuel in a very few years.

We must not forget the Black and White Walnut. It has been truly said that the Black Walnut is the Mahogany of Illinois.

I have no objection to the Evergreen trees, but they are not so applicable—they are not so obtainable. I would also add a word in favor of the Blue Ash.

I hope our action will be such as will induce our farmers to plant forest trees, and that by and by we shall see clumps and belts of trees all over our prairies. When we get wise enough to plant trees, we shall see Illinois begin to develop as it ought to do.

Mr. Galusha—Since the report of the Committee on the Ash-leaved Maple (*Acer negundo*), we have had additional testimony in respect to the sugar producing of the tree, and it is recommended for general cultivation. A friend has sent here a sample of sugar. It was made under unfavorable circumstances, the sap standing four or five days before being boiled. From about ten gallons of it was produced two pounds of sugar, and about half a pint of excellent sirup. The sugar in appearance and taste cannot be distinguished from the Hard Maple. The tree is a rapid grower—will do to tap at ten or twelve years old—is very hardy.

Mr. Shepherd—The same sugar was shown at the Buel Institute, and was awarded a large premium. The gentleman who made it had little faith at the commencement of the boiling it; but after producing the sugar, was convinced that the sap was richer in saccharine matter than the Hard Maple. The general maximum size the tree attains is about 12 inches in diameter. The tree has not generally been considered of much value, but if it makes a good shade, and sweetening in the spring, it is worth cultivating. Do not consider it of value for firewood.

Mr. Overman thought the Osage Orange would prove a valuable timber, although a slow grower.

Mr. Bryant—We want something to break the winds and modify our climate. A general planting of screens or belts of timber would have a great effect on our climate. Evergreens for that purpose are best.

ORCHARD SITES.

Dr. Long, of Alton—I consider that elevation is a very important consideration in the selection of places for raising fruit, particularly in raising the Peach. My friend, Dr. Hull, has the highest position in our section of the country. The bluff is very abrupt, and he is perhaps two hundred feet above the level of the Mississippi river. One of the first farms in that region was opened upon part of the land which he now owns. Upon that there was a Peach orchard—it has since been replenished with other fruits. That orchard seldom failed, while all around, the peach crop would be cut off. In my orchard, which is a mile and a half or two miles back, my surface varies, some on high land and some in the valleys. I set out my orchard in 1859. I had set out one in 1832, a little way from it. One spring there came a heavy frost—the trees were protected from the north and northwest. That frost killed all the fruits below a certain level; while in this latter orchard it took all the old trees, perhaps ten feet from the ground, and you could see the level of the frost very plainly; it was as level as if it had been run through by a surveyor's instrument.

The situation should be selected as to obtain an elevation if possible.

I should protect by belts of trees. For this purpose the Walnut is very valuable. I would make break-winds of them. It has been stated that the walnut could not be raised to advantage. The White Walnut can be easily transplanted. Plant your White Walnut near the surface of the ground, and cover them with coarse chips or straw, and the roots will spread upon the surface of the ground. I have one tree that has been growing about twelve years, and it is about 12 inches in diameter.

Mr. Bryant—I wish merely to say with regard to the location of orchards that I consider it important that they should be located so as to be protected, or should have artificial protection. Some have disputed the utility of sheltering orchards. I have been raising fruit for nearly thirty years where I live. I live on the east side of the forest that borders the Bureau river in Bureau county. The elevation of the soil is not quite as great as it is in some places in that vicinity. The orchards planted

along the east side of the timber have borne more uniformly, and a larger quantity of fruit than those on the prairies. I think they have borne one-third more fruit. Sometimes there is but little difference. It seems to me that facts demonstrate that shelter is useful for an orchard.

Mr. Tice.—I certainly cannot agree with my friend, Dr. Long, with regard to the effects of the frost. Dr. Hull stated that the valleys and sheltered localities were subjected to the radiation of heat, which was liable to cause a premature circulation of the sap. That is perhaps the entire philosophy that lies at the bottom of the injury of the fruit of the Peach tree. If the gentlemen will now examine their trees, they will find that the buds have already swollen in consequence of the unusually warm weather we have had for the last two weeks. If we have a frost that sends the thermometer five or six degrees below zero, our peach buds are killed. The Peach tree is peculiarly sensitive to a change of temperature. It requires a winter nap. If we have a frost that freezes the tree, that gives it its winter nap. As soon as the weather moderates, its buds begin to swell, and the fruit buds will be killed, unless our winter should prove unusually moderate. * * * The radiated heat develops the buds in a certain horizontal line, and the buds that have arrived at a certain stage of maturity perish on a line as level as the surface of a lake. The reason the Peach tree does better on the point of a hill, is because it is not subjected to this radiation of heat. The same philosophy holds good where the orchard is planted on the east side of a body of water. The water absorbs the heat in moderate weather. The reason why fruit is not so apt to winter kill on the hill-top as in the valley, is because it is not so much affected by radiated heat. Every body knows that the frosts usually appear two weeks earlier in the valleys than on the hill-tops. This is the case when the atmosphere is still; but when there is wind to agitate the atmosphere, there is not so great a difference. We know that the radiation of heat affects the foliage of the valleys. The trees in the valley are in full leaf long before those on the hill-top. The foliation commences in the bottom of the valley and goes up until it reaches the top. Were it not for the radiated heat, the mountain tops would be the first to show foliation.

Dr. Long—With regard to the radiation of heat affecting the Peach tree, I will not consume any time. So far as the fact is concerned, I have told what has happened in my neighborhood; and from these facts you can draw your own conclusions. Our orchards are on the east side of the Mississippi, and we are influenced, no doubt, by that stream, which seldom freezes over at that point. It froze over last winter, and we lost much of our fruit, killed by the freeze of the first of January.

Mr. Minier—I would like to inquire of the gentleman from St. Louis, if he, or any one else to his knowledge, ever tried to preserve the peach buds in the condition in which he now finds them? Zero will be very apt to destroy those buds. Is there any possibility of saving the fruit of those trees? I will say that I once accidentally put cornstalks around a tree on which the buds were in this condition; and they were not removed until in April, and the tree bore peaches. It strikes me that by properly covering up the buds, we might keep them.

Mr. Overman stated that Judge Bryant, of Fulton county, had saved his trees and fruit by drawing the tops togther with a cord, and protecting with cornstalks.

Mr. Wilson, of Sandoval—I reside near Sandoval, and have, in connection with a neighbor of mine, between eighty and ninety acres of Peach trees. Last spring the trees appeared to be injured very much; but they gradually recovered, and by heading, I think another season will entirely erase the effect of the injury. In my orchard there were a few peaches. They were not protected. The orchard is on a slight inclination north, and is not protected by any thing. The northwest wind has a fair sweep for seven or eight miles. These facts may give some information in regard to the effects of protecting orchards.

Mr. Foster, of Iowa—I live upon elevated ground near the Mississippi—I should think one hundred and sixty or seventy feet above the river. The cold weather of 1855–6 did not kill my Peach trees, while it did kill a great many of those in the valley. A neighbor of mine has been in the habit for a few years of bending down some lateral branches, and laying brush upon them, and has succeeded in raising peaches from these branches, when no other peaches were grown in that vicinity. We learn from that, perhaps, that there is a radiation or warmth in the soil. * * * When the grape vines are thrown down upon the ground without any sort of protection, they are less liable to injury than when tied up and exposed to the bleak winds. Often in winter, when there is no snow, those vines and limbs which lay upon the surface of the ground do not kill, while those high up do. Yet those of mine high up on the bleak wind of the hill have not killed. We know that the thermometer falls lower in the valleys than in the high places.

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

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

MARCH, 1865. VOL. VII.---NO. 3.

Hints for March.

FLOWER-GARDEN AND PLEASURE-GROUND.

When the first warm March day comes, who is there that does not want to do a little gardening? The most delicate woman, who for eleven months in the year is the slave of frivolity or fashion,—the child just emerging into the dignities of 'bib and tucker,'—the hard-worked clerk, or care-worn merchant,—all, whether the tenant of a small back door yard, or with the privilege of many acres, during this month feel impelled to offer some sort of homage to the spirit of gardening. Nature will not entirely let man forget that the great business of life was originally designed to be in a garden, to dress and to keep it. To us every spring seems like the beginning of a new world,—a new creation. But still the same laws prevail,—the same rules demand attention. With the world's first birth, gardening came with it; and with its annual rejuvenation, crops out the same love of gardening that marked the most primitive times. But, alas! man is but a poor weak mortal. The natural instincts of childhood suggest right things to him; but as he advances in life, one temptation or another leads him astray, until one by one each falls away from the bountiful joys prepared for him, and attempts to feast on mere husks of swine.—How few of those who now feel the exhilirating joyousness of trowelling, digging, or raking up the soil; sowing seeds, setting flowers, planting fruits, shrubs and trees; will hold on to this true faith in nature till the sere and yellow leaf shall come again? We fear but few comparatively of those who follow these lines with us now will be with us to the last. But it shall not be our fault if they do fall away. We shall try to make our hints as instructive as we can. The prophet of gardening, it shall be ours to exhort, encourage, warn and direct our people; promising full rewards to all those who with us prove 'steadfast to the end.'

Preparing ground is, of course, the first thing in order.

If flowers have been growing in the ground for many years, new soil does wonders. Rich manure makes plants grow, but they do not always flower well with vigorous growth. If new soil cannot had, a wheelbarrow of manure to about every fifty square feet will be enough. If the garden earth looks grey or yellow, rotten leaves—quite rotten leaves—will improve it. If heavy, add sand. If very sandy, add salt—about half a pint to fifty square feet. If very black or rich from previous year's manurings, use a little lime, about a pint slacked to fifty square feet.

If the garden be full of hardy perennial flowers, do not dig it, but use a fork, and that not deeply.

Dig garden ground only when the soil is warm and dry. Do not be in a hurry, or you may get behind. When a clot of earth will crush to powder as you tread on it is time to dig—not before.

If perennial plants have stood three years in one place, separate the stools, replanting one-third, and give the balance to your neighbor who has none.

Set out the annuals you may have got forward in windows or frames—that is the hardy ones. The plan used to be to set out in a shower; but that plan is barbarous. No wonder with such old fogyish rules our handsome young ladies are disgusted with gardening. Let the girls lift the seedlings carefully from the soil in the pots, set the roots in a saucer of water, take them to their assigned places in the garden, and from the water dibble them at once in. Cover for twenty-four hours with an inverted flower-pot—next day cover only six hours during the middle of the day,—next but an hour or so during hot sun, if there be any; and the plant is safe. Study the differences between hardy

and tender annuals. The latter must be set out only in April. In the North—extreme north—also of course, our rules are too early. Go, by the seasons, not the almanac. March is rather a treacherous month, even in our favored latitude. Plants that have been covered by leaves may be undressed if they show signs of growth, which is the best rule for uncovering all kinds of protected plants.

Prune shrubs, roses and vines. Those which flower from young wood, cut in severely to make new growth vigorous. Tea, China, Bourbon and Noisette roses are of this class. What are called annual flowering Roses, as Prairie Queen and so on, require lots of last year's wood to make a good show of flowers. Hence, with these, thin out weak wood, and leave all the stronger.

To make handsome, shapely specimens of shrubs, cut them now into the forms you want, and keep them so by pulling out all shoots that grow stronger than the others during the summer season.

Do not transplant extensively till the ground is warm and the buds are about to push. Many things die by exposure to winds for a few weeks before they have warmth to push roots and leaves into growth.

The rule for pruning at transplanting is to cut in proportion to apparent injury to roots. If not much the worse for removal, cut but little of the top away. Properly pruned, a good gardener will not have the worst case of a badly dug tree to die under his hands. In a nursery, where these matters are well understood, trees "never die."

Box edgings lay well now. Make the ground firm and level, plant deep, with tops not more than two inches above ground.

Roll the grass well before the softness of a thaw goes away. It makes all smooth and level.

Graft trees or shrubs where changed sorts are desirable. Any lady can graft. Cleft grafting is the easiest. Split the stock, cut the scion like a wedge, insert it in the split, so that the bark of the stock and scion meets; tie a little bast bark around it, and cover with Trowbridge's Grafting-wax, and all is done: very simple when it is understood, and not hard to understand.

Prepare for some little 'out of the way' notion in the gardening way. The great Landscape Gardeners will tell you to make every thing look as natural as may be. Perhaps they are right in a general way; but we never see in nature a pole with a hoop at the bottom, leading a dozen of strings to the top of the pole like a sugar-loaf, with scores of Cypress-vine branches running over them; Trees trained like fans, or a dozen of colors grafted on one bush; or upright Irish Junipers, or Weeping Willows, or, for the matter of that, double Roses. In fact, in some things, the more unlike nature, if not ridiculous, the better it will please.

FRUIT GARDEN.

All fruit trees like a rather dry rich soil. On a cold clayey bottom, diseases are usually frequent.

Underdraining is of great benefit to trees in heavy ground,—also is subsoiling; but subsoiling without underdraining, is rather an injury to healthy growth than otherwise.

Do not plant deep; cut off tap roots, and do all you can to encourage surface fibres. Surface manuring is the best way of doing this after the tree is planted. Do not allow any thing to grow vigorously around your trees the first year of planting, nor allow the soil to become hard or dry. Let trees branch low, and prune a little at transplanting.

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.

Raspberries and Blackberries may be planted towards the end of the month; they should be cut down to within a foot of the ground at planting; they will, of course, not then bear the next season after planting. But this is a benefit; no fruit tree should be allowed to bear the same season.

Occasionally reports reach us from the Western States of an almost total destruction of peach and apricot buds, by the severe weather. Our friends will yet find it to their interest to take 'trouble' with a few trees, and train them to stakes '*en espalier*,' by which they can readily be protected by branches, from the sun, which is the cause of the injury by its shining on the frozen buds. Those who have such trees on boards or fences, should take measures to protect the flowers from the warm mid-day sun.

In a few years, when trees will no doubt not bear and do well any more when left to themselves and to nature, this *espalier* fashion of training will be more popular than it is now. Insects, blights, mildews, knots, warts, and other what-nots, form a wise provision of providence for the benefit of skilled gardeners. Any body can stick in a tree, and gather fruits; but it takes industry and good horticultural training to triumph over all these obstacles, which it surely will do when it has a chance.

VEGETABLE GARDEN.

This is a busy season south of Pennsylvania in this department; here, we must wait till the end of the month, and northward, still later. The crops noted, will, of course, be dependent on the arrival of the *season*, which is rather indicated by the ground becoming warm and dry, than by the almanac. It is very important to have crops early; as soon as the ground is therefore in good condition put in the seed. Possibly a cold rain might come and injure them, and you may lose and have to make a new sowing. Even so, it is but the loss of the seed and labor, while, if the seed do *not* die, the early crop will more than repay that risk.

In the hotbed, Pepper, Egg-plant, Tomato, and Cucumbers may be sown,—and in a cooler hotbed frame, Early York Cabbage, Cauliflower and Celery. Those who have not got a hotbed can sow a few pots or boxes, and keep them near the light in a warm room.

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. Of early Potatoes, we think Fox's Seedling is the earliest, though in some localities the preference is given to the Early White Sprout. 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. Among the Radishes, the Old Short-top, and the Red and White Turnip are still ahead. In Spinach, the Old Round-leaved; so that on the whole there has been little advance made on early kinds of vegetables.

In addition to sowing of the above, Onions, Leeks, Parsnips, and Parsley must be sown at this season—not for the main crop, but to have a few in advance of the rest. To keep over the winter, almost all kinds of root crops become tough or coarse if sown too soon.

In the open ground Peas and Potatoes receive the first attention. Then Beets and Carrots. Then Lettuce, Radish, Spinach, Onions, Leeks, and Parsley. Beyond this, unless in more favored latitudes than Pennsylvania, little can be done until the first week in April. There is nothing gained in working soil until it has become warm and dry.

HOT AND GREENHOUSE.

Look out for a good stock of bedding plants in time: by striking cuttings of such things as grow rapidly and speedily, and sowing seeds of such annuals as may be advanced to advantage.

Fuchsias may now be readily struck from the young growth of the old plants, which will make excellent blooming plants for the next summer season.

Dahlias should now be brought forward. A good plan is to shorten the extremity of the roots, put them in six inch pots and place in a warm greenhouse. In a few weeks they will sprout, when they should be shaken out, divided with a piece of root to each sprout, and separately potted in 4-inch pots.

Pansies are coming now into flower. They like an airy frame, where they will not be roasted at mid-day nor exposed to drying winds, and yet have a free circulation of air and plenty of light. Planted out in such a frame, and the old shoots cut away as soon as the plant has done flowering, the plants will keep healthy over till the next season. Superior varieties can be raised from seed. Choose those with the roundest petals, best colors, and the first flowers that open, to raise seed from.

Camellias will require rather more water while growing than at other times. Just before they grow is a good season to graft. Cut down the stock, cleft graft in the crown, wax, and plunge in a bottom heat of 70°. A great many kinds may be had on one plant by the bottle system: A shoot about to grow is obtained, and attached to the stock as in inarching, the end of the shoot being put in a small phial of water suspended beneath it. This plan does best, however, with the young wood in July.

Geraniums, Pelargoniums, Cinerarias, and Chinese Primroses, must be kept as near the glass and light as possible; they do little good in shady places. Keep off the green Aphis—for this on a small scale there is nothing like hot water; on a large scale, tobacco-smoke, in several successive light doses, is still the best remedy.

Azaleas succeed well by grafting with the half ripe shoots of the present season's growth on plants raised either by seeds or cuttings. Old wood does not take readily.

Auriculas, Carnations, Pinks, and Polyanthus—the prettiest of florist's flowers, must be kept cool, just free from frost, with plenty of air, if the best results are desired.

Chrysanthemums should now be raised from cuttings for fall flowering. They make better blooming plants than offsetts.

New Holland and Cape plants, such as Epacris,

Acacia, Heaths, etc., are now the glory of the greenhouse; hot bursts of sun on them should be avoided, as it lays in them the seeds of 'consumption,' which frequently carries them off the following summer.

Communications.

PEAR BLIGHT.

BY W. CREED, ROCHESTER, N. Y.

Your article on "Fire Blight," in the December number of the *Monthly*, so entirely coincides with my notion about the matter, as well as others with whom I have conversed upon the subject, that it induces me to relate a circumstance which happened some five winters since, when I unexpectedly fell into conversation with an experienced Pear-grower of some twenty year's standing; and while we were freely discussing the merits and demerits of Pear culture, an old but intelligent farmer came up and claimed a quarter of a century's experience with this fruit, and feeling an interest in Pear culture, gave his testimony most willingly. The experience of both these veterans was in perfect harmony with your conclusions. They had cultivated this delicious fruit for many years without any symptoms of disease, and consequently encouraged me to make one more effort to keep my trees in a healthy condition. As we separated, they particularly admonished me not to over-feed my pear trees, as this practice, if continued, would surely play havoc with them. I resolved to accept their advice, and have up to this time found it correct.

The farmer above referred to, was an entire stranger to me, but the other party to this conversation I have frequently seen in Rochester. Your article on the "Fire Blight" being one that interested me, for I cultivate nothing but Pears and Grapes in my garden, my curiosity led me to decide upon saluting the latter the first time I again met him, and ascertain, after a lapse of five years, whether he entertained the same opinion now concerning the Fire Blight. I did meet him, and he most emphatically expressed the same opinion as previously given; in fact, he now tells me he has not seen a particle of blight on his Pear trees for the past twenty-five years!

There is, however, one thing more in connection with their advice, and that is, they occasionally applied a little salt to their trees, either in fall or early spring; this, of course, I have faithfully adhered to, and, I must say that since this conversation took place, I have not seen the first trace of blight—not even a twig! while some of my amateur friends, with their highly enriched soil are growing weary of Pear culture, as this blight is an annual visitant—partially and sometimes wholly destroying the most thrifty and highly prized trees. My trees are from 8 to 14 year's old, and two or three handsful of salt annually applied to each tree.

In planting Pear trees, my invariable practice is to dig about three feet deep and three or four feet wide, according to the size of the trees. At the bottom of the hole, I adopt tho old plan of putting large stones or slabs to check the downward tendency of the tap roots. I also use air-slacked lime pretty freely to sweeten the soil, and adding a little salt; but reserving enough good soil, without either lime or salt, to protect the roots, in case either may have been applied in excess.

NATURE'S LAW OF COLORS.

BY PETER HENDERSON, JERSEY CITY, N. J.

For fifty years we have had amongst us intelligent horticulturists, who, like the alchemist's of old, have vainly longed for and expected that they would find the Philosopher's stone. The combination of three colors—scarlet, blue and yellow—in varieties of the same species of plants. So far, vain have been all expectations, and so far all precedent shows us the folly of ever indulging the hope; yet it is astonishing with what pertinacity even intelligent men adhere to a fallacy. An enthusiastic Florist here, who grows the Dahlia in its highest perfection, still blindly believes that from his annual thousands of seedlings he will yet be blest by the sight of a blue!!

A well-known writer on the Rose in Philadelphia, some years ago allowed his enthusiasm to carry him away so far as to place on record his opinion that we would yet have "every shade from white to black," in this Queen of flowers. But, to cap the climax, a western correspondent just writes me that he has at last produced in the Verbena a clear yellow! wishing me to distribute it far and wide throughout the length and breadth of the land. Now I was once before the unfortunate medium of palming on the horticultural community a so-called yellow Verbena, implicitly believing in the confident descriptions of one of the most distinguished London firms. I copied their description *verbatum*, and gave it to my customers in the full belief that it was correct; but, alas! for human probity, the "Welcome" yellow proved only a dirty white, which I had known in my 'prentice days, twenty years before, as *Verbena sulphurea*, which had been rescued from deserved oblivion by this enterprising firm, and as the nearest approach to a yellow put upon the public as such, as a *new* plant at the same time.

I think this fact cannot be too strongly put before your readers, these colors—*scarlet*, *blue* and *yellow*—in *varieties of the same species*, have never yet occurred, and are never likely to occur; a knowledge of this borne in mind would be the means of saving many who love flowers from investing in such novelties (!) which are yearly palmed upon them, in the rural districts, by unprincipled itinerant venders. It would be no more strange to see a horse or cow of the color of a *scarlet* Verbena, or of the *bene* of Delphinium formosum, than to see a Dahlia or a Rose of the latter color, or a Verbena of a golden hue. The laws of nature in regard to colors seem as irrevocable as the laws of gravitation.

EARLY-FLOWERING STRAWBERRIES.

BY JOHN SAUL, WASHINGTON, D. C., AND J. KNOX, PITTSBURGH, PA.

Pistillate Strawberries, in a general way are not favorites of mine. I consider Hovey's Seedling, Russell's Great Prolific, and Fillmore, among the best, and in the order named; though I have a number of others, there is not one I could add to these three for general cultivation. Hovey's I place at the head of all pistillates. I grow it extensively, and have done so for some years, and with perfect success; it never disappoints me of a crop. In planting I use no staminates to fertilize, but in their place hermaphrodites, which answer every purpose: such varieties as Victoria, Triomphe de Gand, Vicomtesse Hericart de Thury, Alice Maud, Wilson's Albany, etc., answer admirably; they bear well themselves, and do not over-run and choke out the Hovey's, as some strong robust staminates are disposed to do. These I introduce liberally, one-sixth of the quantity planted. Grown in this way, I have had as heavy crops from Hovey's as I have ever seen of any Strawberry. Russell's Great Prolific and Fillmore are deserving of extensive cultivation.

I have said, in a general way pistillates were not my favorites, though I grow Hovey's extensively, considering it not only the best of its class, but the best of all American Strawberries.

My favorites are the hermaphrodites, and in the order I name them: R. Seedling Eliza, Triomphe de Gand, Victoria, La Reine, Vicomtesse Hericart de Thury, Alice Maud, etc.; from these, with ordinary good culture, I can get abundant crops of large luscious fruit, which commands the highest price in market. My crop of Seedling Eliza, the past season, brought at wholesale 40 cents per quart—not a solitary quart, but by the 50 or 100 quarts—which pays for a little extra attention. I have a variety which will probably dispute precedence with some of those named: the Jucunda; it is the largest of all Strawberries, a firm fruit of exquisite flavor. Though I have had it some time, I have not grown it on as extensive a scale as Seedling Eliza. To test any variety thoroughly it should be grown considerably for several years, when its true character will show itself. JOHN SAUL.

Why does your correspondent want *early flowering* Strawberries, when early flowers are cut off by frost? And why does he want six varieties exclusively pistillate? It is hard to find so many good pistillate varieties. Burr's New Pine and Baltimore Scarlet are both very early and quite good; Fillmore is invaluable with me, but it is medium in time of ripening; the same may be said of Russell's; Hovey's Seedling is not worth planting in this region, and if it were, it is not early; McAvoy's Superior is very fine, when you get it, and is much more reliable than the Hovey, but you cannot rely on a crop of it every year.

I believe I would advise your correspondent to select Burr's New Pine, Baltimore Scarlet, Russell and Fillmore, and if he must have six varieties, add McAvoy's Superior, and Hovey—*providing Hovey has been tested in his locality, and has proved reliable.* The best early Strawberry I grow is the Golden Seeded (hermaphrodite). It is not as early by a few days as the Burr's New Pine, Baltimore Scarlet and Jenny Lind, but what it lacks in time it more than makes up in productiveness, size, beauty and good quality. I shall plant it very largely the coming spring. J. KNOX.

GRAPES IN CITY YARDS.

BY F. K. PHŒNIX, BLOOMINGTON, ILL.

You will bear me witness how gloriously your Philadelphia city Grape vines were looking last summer, even though outside the town the storms and mildew had spoiled most of the crop. Furthermore, how earnestly I besought you to bring up this subject of *Grape culture in cities*, and urge it upon the attention of your readers—naming the wonderful contrast above-mentioned, as an unanswerable argument in favor of the early and universal establishment of the good King—no, *President*

—Grape; reserved in more senses than one to crown these last, best days.

With Mr. Beecher, I believe profoundly in Apples—not even to him will I yield in hearty, humble, grateful inspiration and veneration 'neath the arching shrine of a patriarchal Apple-tree. It is the heaven-ladder of sweet childhood,—the great farm fruit-harp, each varied season discoursing grand music. Peculiarly the country's pride and blessing is the Apple-tree,—but how for poor cities, are they to be left blaring, bare and bleak, brick-burnt and stony, as heart of miser or fashionable they so often shelter? Yes, *cities*—I repeat it—are they to be given up; the last relic and token of sweet country life destroyed, for-sworn, absolutely burnt out, as through fire, all vegetable remains are extinguished in the formation of their favorite brick and stone, and iron, and glass, and gold?

Nay, verily, not if you, and I, and Horticultural Societies, and all fruits and flowers, and lovers thereof, especially with the help of good President Grape, can prevent!

Such a doom (?)! Avert it—forbid it! Are not our American cities near enough already to perfect baldness and insanity, to be in need of grape strait-jackets, and wine-swathed compresses and wet-caps?

But, Mr. Editor, did you not half promise me to tell your readers what you and I and everybody saw there last summer,—that every Grape-vine in the city, at least so far as I could see, was laden with healthy, splendid fruit,—a relief, a beauty, a luxury, a glory in that pent up, torrid city?

As you do not "open on it," I must, lest the very stones cry out against us. Please now incline and enlighten your verdant, humble querist,—Do grapes generally do as well, or let us say well, in cities? From what little I can see, I am inclined to believe the Grape was fore-ordained to meet just that otherwise insatiable and terrible and increasing barrenness and want, even as cities seem bound to grow till earth becomes, it may be, a solid city,—and then naught but wall fruit, as grapes and *espalier* and hanging gardens, in attics, glass roofed, and dwarfs shall prevail.

But tell us, are not Grapes generally successful in cities; and if so, are they not most beautiful and worthy—yea, unimpeachable, meet, fit, thoroughly proper, for introduction into the very highest circles? In other words, Mr. Editor, ought not *Grape culture in cities*, to be and become FASHIONABLE?!

I have said it, and survived; and forbear, knowing that I can "no further go." Please append.

IMPORTANCE OF PROTECTING INSECTIVOROUS BIRDS.

BY J. P. NORRIS.

The importance of preserving from persecution such birds as live upon insects, is every day becoming more and more apparent. All birds are more or less beneficial to Agriculture; but the Insectivorous birds seem to especially demand protection, as they accomplish a vast amount of good without any of the evils attendant upon some other classes of birds. Let every farmer, pomologist or horticulturist, do all in his power to prevent the destruction of this class of birds, and he will be amply repaid by the great diminution of insects around him. If the wrens, bluebirds, robins, etc., were encouraged to build around graperies, we feel certain that there would be fewer *curculios* and other such pests as annoy the pomologist. Then the horticulturist would not be annoyed by having his Roses literally eaten up as soon as they break into blossom; the farmer would not loose his tender vegetables just set out, or the fruit in his orchard, by the insects that infest them; and the pomologist might see ripen without apprehension, his fine specimens of *Bartlett's*, *Bonne de Jersey's*, etc. Encourage the birds, we say, and they will more than two-fold repay you.

Many persons are not aware that in Pennsylvania there is a law for their protection. An Act of the Legislature of Pennsylvania, dated April 21st, 1858, provides:

"Sec. 1.—It shall not be lawful for any person within this Commonwealth to shoot, kill, or in any way trap or destroy, any bluebird, swallow, martin, or any other *insectivorous* bird, at *any season* of the year, under the penalty of two dollars."

"Sec. 4.—That no person shall at any time wilfully destroy the eggs or nests of any birds mentioned in the different sections of this Act, within this Commonwealth, under a penalty of two dollars for each and every offence."

"Sec. 6.—And if the offender shall refuse to pay the said forfeitures, he shall be committed to the proper county jail, for every such offence, for the space of two days, without bail, or any mainprize."

The remaining sections of the Act relate to such birds as are denominated *game birds*.

This law should be enforced with the utmost severity. The blackbirds, thrushes, larks, sparrows, buntings, starlings, etc., appear to have been created for the purpose of destroying the insects that infest the grass crops and other vegetation near the ground; the titmouse, creeper, etc., destroy the insects both in the larva and perfect states, inhabiting the limbs and bark of trees; the woodpeckers destroy such insects as bore into trees; the many species of warblers, etc., destroy the insects inhabiting the leaves of trees; the fly-catchers by day, and the night-hawks and whip-poor-wills by night, are almost all the time capturing the flying insects near the earth: so that it will be seen that God has created a species of birds adapted for destroying each different species of insects. Why, then, will not men profit by His great wisdom in furnishing an antidote, as it were, for every poison?

If we have shown, no matter in how slight a degree, how important it is to protect the Insectivorous birds, we shall be amply repaid for our trouble; and if we have succeeded so far as to raise champions for the birds, we will not be in a condition that the town of Killingworth was, as described by Longfellow:

> "Devoured by worms, like Herod, was the town,
> Because, like Herod, it had ruthlessly
> Slaughtered the Innocents. From the trees spun down
> The canker-worms upon the passers by,—
> Upon each woman's bonnet, shawl and gown,
> Who shook them off with just a little cry;
> They were the terror of each favorite walk,
> The endless theme of all the village talk."

PROPAGATION OF PLANTS BY CUTTINGS.

BY PETER HENDERSON, JERSEY CITY, N. J.

Read before Pennsylvania Hort. Society, Feb. 7,'65.

I do not know that I can present anything new on a subject that has been so often discussed; but, although I have but little new to offer, I will endeavor to simplify an interesting subject that too many gardeners either intentionally or through ignorance, try to surround and befog with mystery.

My manner of constructing the Progagating-house having already been given in the *Gardener's Monthly*, I need not here repeat the description; I will only say in this connection, that any one who understands the conditions on which cuttings root, can accomplish the work by a hotbed, or along the front bench of a greenhouse, with the flue running underneath, with perfect success; although he could do so more rapidly and with less attention in a Propagating-house, fitted up with all the 'modern improvements.' While, on the other hand, the gardener that goes to work without a knowledge of these conditions, though provided with the best Propagating-house that ever was planned, will most certainly fail, or, at least, will not have that unvarying success as the man who knows his business ever should have.

Propagation by cuttings is always most successful between the months of October and April, from the fact that during that period we have the necessary low atmospheric temperature, that I will endeavor to show is necessary to complete success.

Our favorite system of propagating is by using cuttings of the 'young wood,' that is, young shoots that are formed by starting the plant in a greenhouse temperature, averaging from 40° to 60°. The proper condition of the cutting is easily determined by a little experience. In the case of Roses, the best are 'blind shoots,' that is, the short shoots that do not show flower buds; and time when they are of the proper degree of hardness is determined by the flower-buds on the plant just beginning to develope. But with bedding plants, generally, we never can get the cuttings too soft, provided that they have not been grown in a high temperature, and without air. The tops of the young shoots are always best, although, if an elongated shoot is soft enough, it may be cut into sections of one or two inches in length.

In making cuttings, preparatory to being inserted in the sand of the bench, it is of no importance whatever to cut immediately below a joint, as three out of every four of the gardeners we meet still think it necessary to practice.

In making cuttings, our custom is entirely the reverse of that practice, as we cut usually as much below a joint as the cutting is inserted in the sand,—generally something less than an inch. This is done as a matter of economy, both of time and material, as it is much quicker done, and more cuttings can be so obtained than by cutting at a joint; they are also easier planted in the sand: for in putting in cuttings of any kind we never use a 'dibber,' merely pushing the cutting down to the first leaf, when hard enough to bear it; when too soft, lines are marked out in the sand by a thin knife, so that the soft cuttings may be inserted without injury; they are then watered with a fine rose, which compacts the sand sufficiently firm.

I now come to what I have long considered as the only 'secret' of successful propagating, namely, the *temperature;* very simple to give a rule for, but still somewhat difficult to keep to that rule without too much variation.

Soft cuttings, or cuttings of the young wood, should have a *bottom heat* of from 65° to 75°, and the *atmosphere* of the house should be always, when practicable, from 10° to 15° *lower*. If this is strictly adhered to, you are just as certain of a crop of healthy rooted cuttings, in from ten to twenty days, as you would be of a braird of peas or radishes in May. But let once these conditions be deviated from for a single hour by allowing a dash of sun to raise the temperature of the house or frame to 85°

90°, then the soft unrooted slip will 'wilt,' its juices being expended, the process of rooting is delayed, and, if the 'wilt' has been severe enough, entirely defeated. The same caution is necessary in applying the 'bottom-heat,' for, if fire is applied indiscriminately, without regard to the weather, it will be found that you will run the temperature of the bench above "the point of safety," (75°), and in proportion as this has been exceeded, so in proportion will be your want of success. It is true that some cuttings will stand a higher temperature than 75° bottom heat, (grape-vines, perhaps, 10° more), but with plants in general, it will be better to let 75° be the maximum.

In the propagation of Roses, etc., by cuttings of the old or hard wood, less attention is required, but success is not always so uniform, nor, in my opinion, are the plants so obtained quite so good as those made from cuttings of young wood. We prefer to place old or hard-wood cuttings in the north or west side of a house, or, in fact, anywhere where they can be kept the coolest without being actually frozen. Any attempt to apply bottom heat to the degree used for soft cuttings, will almost certainly seal their fate. The temperature of the house may range from 40° to 60°

I will now say a word in relation to the *sand* or *compost* used for propagating cuttings. I know there is considerable difference of opinion on this subject: almost every propagator having his preferences. My opinion is that the the color, or even the texture of the sand or compost has got nothing to do with the formation of roots. Experiments have satisfied me, beyond all doubt, that the sand or compost is only a medium to hold the moisture.

Experiments with *pure water*, *sawdust*, *charcoal*, *brickdust*, and *sands* of all *colors* and *textures*, showed that cuttings placed in each, in the same temperature, rooted almost simultaneously, and equally well. There is rarely ever any deleterious substances in sand, unless saline matter in that taken from the sea shore, which had better never be used when it can be had from anywhere else. Many of my nurseryman friends I know to be victimized to a ridiculous extent in this matter, by freighting sand hundreds of miles to suit the caprice, or *temporary* hide the failures of their propagators; for, for the want of success in two cases out of three, the sand is made the scape-goat.

The most insidious enemy to cuttings is the spider-web-like substance, which now by common consent among gardeners, is called *The Fungus of the Cutting Bench*. Whenever this pest is seen, it may be taken for granted that the temperature has been *too high*, and the atmosphere too close. The remedy is to raise the sashes enough to allow the exit of the heavy atmosphere, which will at the same time *lower* the temperature. I have observed that the 'fungus' can never exist to injure in a temperature below 50°.

Before closing, I will briefly advert to a simple process of rooting cuttings, which is by far the most convenient for amateurs or for professional gardeners, who have no regular propagating-house. It is what is known here as the "Saucer System." It consists simply in filling plates or saucers with sand, the cuttings are then inserted, somewhat closely together—from an inch to two inches apart; the plates are then watered, so that the sand gets into a half-liquid state, then placed in the parlor window, or stage of the greenhouse, *entirely exposed to the sun, and never shaded*. All that is further required is, that the sand must be kept in the *condition of mud* until the cuttings are rooted, which will be in from ten to twenty days, according to the temperature or state of the cutting. Great care must be taken that they never get dry, or the whole operation will fail. This is a very safe method of rooting cuttings, and one that during hot weather is preferable to all others.

TIMELY SUPPLIES OF GARDEN SEEDS.

BY CHRONICLER.

The planting of the garden, and maturing of the crops are often retarded by the want of a timely supply of seeds. This should never occur, as it is apt to dispirit the gardener and cause him to be indolent, which ends in a loss and grievous disappointment to the family. The same is the case when small quantities of seeds are got at intervals. No man can plan accurately without all the needed materials are before him. Nothing is gained in cost by small purchases of seeds, as they are mostly higher in small quantities, and should the first crop fail, as is often the case, the time lost is not to be redeemed. The gardener should obtain all the seeds needed for spring and early summer cropping by the first of March, when the tender kinds should be sown in hotbeds. The reception of a full supply of seeds at that time dispels the gloom of winter, and animates his whole system with anxious activity. Having the seeds as well as the beds and borders in his sight, he can plan with correctness and execute with alacrity; his business slides smoothly before him, and general satisfaction is the result.

Previous to obtaining the seed, a wooden box lined with tin or zinc, should be procured, having lock and key, in which to keep the seed, as the metal lining protects them from dampness, rats and mice or vermin Where there is even a good supply of seeds purchased, it would not be much trouble if the owner's name were marked on the top and the box left with the order at the seedsman's.

A second supply of seeds should be procured in July, for late fall and early spring crops, such as Fall Radishes, Turnips of sorts, Winter Lettuce, Prickly-seeded Spinach, Scurvy Grass, Corn Salad, Winter Kale, Early Cauliflower, Early York Cabbage, etc. The entire supply should be obtained at one time, and the seeds will be ready to sow when the proper time arrives.

But seed barely sufficient to crop the ground once is not enough,—at least one-third more should be provided to allow for failures, which will more or less nearly always occur; and should no failure happen, the overplus of seeds, if preserved in the manner described, will be good for the next season. All failures, it should be remembered are not to be attributed to bad seed or careless gardeners: a wet or very dry spell soon after planting, unsuitable manures or ingredients already in the soil, may all tend to destroy the germ. Market gardeners lose crops by the acre in unfavorable weather, but being near cities they readily procure another supply; but a gentleman's gardener, who lives many miles from such resources, has no hopes, should his crop fail and supply of seed run out, of retrieving the loss. Instead of taking the lists furnished by seedsmen for the proper quantity to furnish a given space, as a sure guide, the better plan is to note down the results of the last season, and provide accordingly.

THE OLD KENTISH CHERRY.

BY C. A., PARIS, CANADA WEST.

When now I look back, to when I was boy,
And muse on those objects that then gave me joy;
Though few things of childhood in manhood will please,
There is sometimes a life-long attachment to trees,
Some floweret or shrub, in our garden or lawn,
Oft carries us back to life's earliest dawn;
And there's nothing imprest on my memory more plain
Than the old Kentish Cherry that grows in our lane.

The snowdrop and crocus, those pickets of spring;
What bright inspirations their little flowers bring;
The daphne mezereon, whose venturesome flower,
Sends forth its rich fragrance with the first April shower;
Our own native balsam, with its silvery spray,
And that noble old evergreen, Spruce of Norway;
These all have their charms, but my thoughts turn again
To the old Kentish Cherry, that grows in our lane.

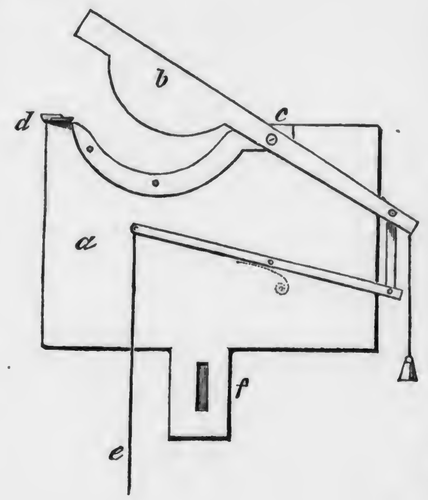
For their associations some objects we prize,
Though the sight of them starts soft tears in our eyes:
Yon grape, my fond Agnes planted, south of the hill,
Though she long has been dead, and her voice is now still;
'Neath that vine fancy sees her, and hears as of yore,
As she sat and she sang the "Still night" of Tom Moore;
But the first time I heard her, Oh, I remember so plain,
'Twas 'neath the old Kentish Cherry that grows in our lane.

But apart from all this do I love this old tree:
Through many long summers it has fruit yielded me,
Which for canning, and drying, and baking in pies,
From its high titled cousins will bear off the prize.
One word of advice, noble tree, then adieu:
Wed thy fair cousin Duke, and Black Bigarreau;
Then thy offspring shall point, while this earth shall remain,
With pride to their parent that grows in the lane.

ROOT-GRAFTING MACHINE.

BY J. P. REICHARD, ST. JOSEPH, MO.

I send a pencil sketch of my machine for root grafting, which being very simple requires but little explanation:



a, represents an upright board, to which the knife, *b*, is attached at the point *c*; *d*, is a leather bed, slightly concave, in which the point of the knife works for splitting the roots. The knife is kept open either by a weight or spring, as shown in the engraving, is worked by a pedal attached to the line *e*. The blade should be of good steel, and made to work smoothly over the lower jaw of the shears; the action cutting being the same as that of the pruning shears in general use. The machine is fastened to a bench, as shown at *f*.

The original machine was invented and manufactured by my father, and has been in use a number of years. No doubt in the hands of a good mechanic it could be very much improved. I have never found any thing better than a good sharp knife for wedging the grafts.

What is the advantage of splice over cleft grafting, if any; and which is generally considered best?

WINTER GRAPES.

BY W. C. STRONG, BRIGHTON, MASS.

The Grape is so generally considered as a fall fruit that the term "Winter Grapes," will have a very uncertain meaning. Probably the term is not strictly accurate. When we speak of Winter Pears, for instance, we mean such varieties as may be gathered in an immature state and under proper treatment which will go through the process of ripening, months afterwards. This chemical change and process of ripening after gathering, is more marked in the Pear than in most other fruits. Our winter and spring varieties of Apples are also examples of this power of maturing, independently of the tree. The Grape, on the other hand, comes to perfection while hanging upon the vine. According to my observation, the fruit which is fully ripened upon the vine is preferable to that which has been kept a longer or shorter time, in drawers or boxes. Indeed, if the Grapes are cut when they fall short of maturity to any considerable degree, the chemical process will not go on; they will remain unripe fruit until they perish. But, provided the required change is not too great, some varieties will come to more perfect maturity after being cut. Some of these varieties also have such superior keeping qualities, that the term 'winter kinds' does not seem misapplied. To bring these varieties more prominently to notice, is a point of the first importance to the public, and to fruit-growers. Comparatively few know any thing of the luxury of Grapes, except during the fall months. Yet there is no more difficulty in having Grapes of excellent quality throughout all the winter and spring months, than there is in keeping the Pear. That the public would appreciate such a winter gift, is somewhat indicated by the comparative prices in October and January. In the Boston market the average price in October was $15 per 100 pounds. Good grapes in January bring 75 cents per pound. Here is a strong inducement for the producer to turn this difference to account.

Suitable treatment in preserving the fruit is a question which has engaged much attention, and this is, of course, a subject which should not be overlooked. But the selection of suitable varieties is of the first importance, upon which success must absolutely depend. My impression is that but few careful experiments have been tried with our native kinds, and that no one can speak with authority upon an extended list. I give my own observations, trusting it may tend to awaken an interest.

The early kinds we should not naturally expect would be valuable for late keeping. The Hartford is inclined to drop, and when this does not happen, after hanging for some time, it dries and shrivels. The Creveling keeps well, but deteriorates in quality. Specimens of the Delaware, designed for keeping were all taken by the birds. On the vine it hangs well, but is inclined to shrivel to a raisin. My impression is against its value as a winter market fruit, judging by its time of ripening, and also its tendency to dry on the vine; but if kept in close boxes, it may prove otherwise. The Marion, the earliest to color of all in my collection, is proof against birds; it is more than a match for them: the birds invariably crying quit. Yet the grape holds on, plump and fair, throughout all the heat and cold of autumn, and is now, at mid-winter, in pretty good eating condition. It is so entirely proof against mildew, so early, and so sure to ripen large crops, that a single vine may be desirable in a collection for winter use; but its quality is not up to the present standard. Concord should be used as soon as it is ripe. It keeps very poorly, and after being boxed for a short time, deteriorates so as to become very disagreeable. Of the Roger's numbers I am sorry to say that with the exception of No. 4, (an own brother to Union Village), and possibly No. 15 also, I have not found them worth preserving. The Isabella is variable under different methods of keeping, sometimes coming out quite plump and fresh, and at others rotting badly. It is almost the only variety now in the market, and has been considered the best for keeping. Allen's Hybrid has kept admirably with me, drying to a raisin and of great sweetness in a dry room, or remaining quite fresh in close drawers. The Catawba is so little grown in this section, being so late in ripening, that any experiments with it are of little value to us. I have kept it until this time, but do not find it as good as the Isabella, part of the berries becoming quite acid. The two new seedlings, "Dana" and "Nonantum," referred to in the report of the Massachusetts Horticultural Society for 1864, though regarded as early, were both in excellent condition on the first of January. But the Grape of all others, which with certainty and with little care, remains plump and sound the whole live-long winter, is the Diana. This is the winter grape par excellance. With us it is rather late in maturing, and this with some inequality: some of the berries in each bunch being scarcely ripe at the very close of ordinary seasons. Yet I have found these scarcely matured berries become quite eatable in mid-winter,—not equal to those fully colored, but very passable. The excellent keeping qualities of this kind depend undoubtedly upon the thickness of its skin. This is such a protection to it, that with the most ordinary care it keeps more perfectly then the Baldwin apple. I should treat them simply as follows:—Cut them just to avoid the frost; trim out all imperfections; pack closely, single layers in shallow boxes or drawers; leave them open in a cool room for a few days to allow moisture to pass off; then close and keep in a cold dry room until April, if you consult your purse and can govern your appetite so long a time. The quality of the Diana is universally esteemed. It will ride any distance to market. When its keeping qualities are taken into account, is it not worthy of more attention?

PRETTY CANADIAN WILD FLOWERS.

BY MR. W. WHITE, QUEBEC, CANADA.

Although the winter in Lower Canada is long and very cold, spring does at length visit us, and then we too have our wild flowers, which, if they lack somewhat of the size and magnificent coloring of the productions of more favored regions, are very beautiful in our eyes. and bring with them many pleasant reminiscences.

Before the last patch of snow has melted from the hillside the beautiful little Mayflower (*Epigœa repens*) bursts its buds, and dots its dark glossy leaves with pretty pink flowers, as it creeps over the granite boulders, and peeps out here and there on the mossy banks.

Then come the modest little heptica, the yellow Dog-tooth Violet (*Erythronium Americanum*), the Blood-root (*Sanguinaria canadensis*), used as a dye by the Indians, the purple Trillium (*T. erectum*), and the painted Trillium (*T. erythrocarpum*). In more open places, and by the roadside, may be found the Spring Beauty (*Claytonia Virginica*), whilst down on the sandy beach of the St. Lawrence, is to be seen the elegant fairy Primrose *Primula mistassinica*), a perfect little gem, pale lilac in color, and so small that a plant in flower may be potted in a thimble.

A little later, and the woods are gay with the Star-flower (*Trientalis Americana*), the Bunchberry (*Cornus canadensis*), the Columbine (*Aquilegia canadensis*), the Clintonia (*C. borealis*), with its rich glossy leaves and pale yellow flowers, the Dicentra (*D. canadensis*), and the Corydalis (*C. glauca*). In moist shady spots the Indian Turnip (*Arisæma triphyllum*) may also be found.

As the month of June advances, the swamps contribute their share, and yield in profusion, Kalmia (*K. angustifolia*, and still later, *K. latifolia*), Labrador Tea (*Ledum palustris*), Rhodora (*R. canadensis*), Pitcher Plant (*Sarracenia purpurea*), Cranberry (*Vaccinum oxycoccus*), Cypripedium (*C. acaule*), Smilacina (*S. trifolia*), Pogonia (*P. ophioglossoides*), Calopogon (*C. pulchellus*), and several of the more common varieties of the orchis.

In the woods we have the yellow Lady Slipper (*Cypripedium pubescens*), one or two varieties of Wintergreen (*Pyrola*), the Prince's Pine (*Chimophila umbellata*), and the beautiful little Twinflower (*Linnæa borealis*), trailing so gracefully over the moss-covered logs.

Our fields are not so rich in flowers as those of more sunny climes; the Canada Lily (*Lilium canadense*), and one or two varieties of St. Johns-wort (*Hypericum*), are the most common, and also the most striking of our field flowers.

The heat of summer seems unfavorable to the growth of flowers here, as we have nothing very attractive in August; there is however abundance of Asters of many varieties, Chickory, and Willow-herb or Fire-weed (*Epilobium angustifolium*). By and by comes the Golden-rod, and then the Gentian warns us that the summer is past, and long winter evenings at hand.

In glancing over the foregoing, those familiar with the Quebec district will, doubtless, notice many omissions. It was not, however, intended to give a complete list, but to merely note, for the information of those fond of nature unadorned, the names of such flowers as may be found without difficulty in rambling through the woods and fields in the vicinity of the capital of the Canadas.

THE COCOA-NUT TREE.

BY BUELL CONCKLIN, NEW YORK.

Amid the magnificent vegetation of the inter-tropical regions of our globe, there is no nobler tree than the palm which bears the Cocoa-nut. If in the delicacy of its structure and the gracefulness of its form, it yields to the silvery Date, the latter falls below it in the majesty of its appearance and the bright golden green of its foliage,—in the constancy and abundance of its yield, and the many and varied purposes it subserves.

Wherever the footsteps of man have traced out a path among the islands of the ocean, where the climate affords that degree of warmth which it requires, there the Cocoa palm may be found, dispensing its blessings freely alike to the benighted and enlightened wanderer.

The peculiarity of the fruit, and of the tree itself, may warrant the expression of the opinion, that in the whole vegetable kingdom there is no plant which more clearly manifests, in its structure and its design, the foresight and the wisdom of the Creator. In the earlier stages of man's existence, while the culture of the soil was yet in its infancy, the Cocoa palm may have possessed a value not equalled by that of any other member of the vegetable kingdom; and still, to the dusky inhabitants of the islands of the Pacific, it yields in importance only to the Plantain and the Banana: wandering over the ocean from island to island, in his frail canoe, he hails with joy from a distance the sight of the majestic Cocoa palm; and while reclining beneath the shadow of its crowned head, and listening to the music of the waves upon the silvery shore, he finds in its fruit the ever grateful source of relief from the cravings of hunger and thirst.

The Cocoa palm is in the full enjoyment of the requisites for its existence, when it can send down its mass of fibrous roots into the porous soil, where the sand of the sea-shore and the darker earth unite. There, bending over the deep, which seems to attract it to itself, it continues, a singular example of never-failing fruitfulness, to send forth upon the waters during the revolutions of a century, the enormous pericarps which contain the germ of a future plant. The outer husk, while it prevents the nut from sinking amid the waters, preserve it in safety when the angry billows dash it with violence against the rocky barrier of some unknown isle. During the earlier stages of its growth, the nut of this species of palm is filled with a clear but sweet and agreeable liquor, which may bear some resemblance in its composition and taste, to the well known fluid after which it is called. As it progresses toward the period of its maturity, the kernel, which is to constitute the nourishment of the future germ, commences to form upon the interior of the shell. It is at this stage, while it possesses a cream-like consistency, that the native of the isles finds the fruit of the Cocoa palm most refreshing and grateful to the taste. From the outer coating of the husk he forms for himself a rude species of spoon, with which, after bursting the unripe nut, by pounding it violently upon the rocks, he scoops out the delicate white substance of the interior shell. Then, and then only, the fruit of the Cocoa palm may be enjoyed without satiety and without danger. As it ripens, the kernel becomes filled with an oil, which, while it is drifting about upon the deep, by its presence prevents the water from entering within, and protects the germ from decay.

The oil of the Cocoa-nut has entered extensively into the commerce of our globe; and to many of the inhabitants of the countries where it is found is an article of prime necessity in the preparation of their food, and the illumination of their dwellings.

The *Cocos nucifera* attains an average height of 80 feet. By its peculiar outline, it may be distinguished for many miles at sea, from the trees of the forest which form the background. Like the inhabitants of the warmer regions of our globe, the vegetation of the tropics attains to maturity at a much earlier period than that of the temperate zones. In a moist and fertile soil, a soil inclining to sand rather than loam, the Cocoa-nut tree produces its virgin fruit, in the fourth year of its growth. In the season which follows, it attains the height of its bearing power, and may give an average yield of an hundred nuts. In a soil less fertile and a climate less moist, it is often seven years before it commences to bear; and in an arid situation the period may be delayed until the tenth year.

Though the Cocoa palm may be said to owe its existence to the sea; and though there are many small islands in the Pacific where it flourishes to perfection, and over which the waters of the ocean at every spring-tide roll from shore, when planted by nature or the hand of man in a low marshy soil, it passes but a lingering existence, and fails in a measure to fulfil its proper end; yet among the thousands of palms that wave along the sea-coast of Central America, the traveller will find scarcely an instance of a barren tree.

The planting of a Cocoa-nut grove is confined to the simple operation of laying the nuts upon the surface of the unplowed land, in the places where the trees are intended to grow. In two or three months the sprouts of the roots burst through the integument of the husk at the point where the stem attached it to the tree, and proceeding in opposite directions, seek for life and light in their respective elements of earth and air. From that period, the culture, which is scarcely less simple than the planting, commences, at each revolution of the seasons grows less, and when the period of bearing arrives, is confined solely the gathering the nuts.

To an inexperienced person, the labor of removing the fibrous covering from the produce of thousand trees, might appear a serious obstacle to their profitable culture; but an expert workman will ascend the trees, and collect and remove the husks from a thousand nuts between the rising and the setting sun.

The ships of the East, were once, and still may be rigged with cordage made from the Cocoa-nut husk. In the manufacture of cables, it is said to surpass the fiber of other plants, and the Spaniards in America once preferred it to oakum for calking the seams of their ships. At the present day, the fiber of the Cocoa-nut husks is used extensively through Europe and America in the manufacture of matting and and other articles of use; and the owner of a Cocoa-nut grove might, perhaps, derive a greater profit from the shipment of the nuts with the husks remaining upon them, than if removed. From the coast of Honduras, they are taken by the ships of the English in this state; and the labor of husking, and the loss from the depredations of insects and rats, which destroy the eyes of the nuts if improperly tarred, are alike avoided. From the earliest ages the Cocoa palm has furnished the materials for the dwellings, the garment and the utensils of the inhabitants of its native zone.

Like the leaves of the Banana and Plantain, those of the Cocoa palm spring from the centre of the tree, and while yet enveloped within it, are surrounded or swaddled in a fabric which may vie in texture and strength with the first rude attempts at weaving by men. Our first parents, in the garden of Eden, might have covered their nakedness with a species of natural cloth collected from the trunk of the Cocoa-nut tree. Perhaps we should reverse this truth by the remark that the first conception of the art of weaving was derived from the study of the fabric furnished by the palm. From the same material the weaver might obtain the pattern of an elastic cloth; and the philosopher will, perhaps, demonstrate to us that the angle formed by the warp and woof, is that which combines the greatest amount of elasticity and strength. But, if the Cocoa palm furnished the material and the pattern for the first rude attempts of the weaver's art, it still supplies a material which may be classed among the first of those which call into exercise the elaborate skill of the present day. We may look back with triumph upon the distance we have accomplished since we received our first lesson in the school of nature; but our pride is humbled by the single consideration that in outstripping her design, we add but to the province of variety alone.

To attempt to convey to the minds of others through the medium of language a definite idea of the general appearance of the palm, would be but a useless task. The reader will obtain a clearer impression of its characteristics if he turns from the text of the writer to the work of the artist's pencil.

We should do injustice to our subject did we omit the enumeration of a single instance of the many useful purposes which the Cocoa-nut tree subserves. While the product of the vine has been the theme of every poet, from the earliest to the present day, we may also allude to the process by which the natives of India, and the Indian isles, obtain from the palm a species of wine, and a substitute for the product of the cabbage-plant.

While wandering, lonely and depressed, along the sea shore of the region of palms, I have found a never-failing source of relief from melancholy in the silent admiration of those majestic trees. There upon the silvery beach, beneath the far-reaching shadows of their crowned heads, and with the solitude of those wild, romantic forests behind him, the Indian, from the bows and the trunk of the palm has reared his rude but picturesque dwelling.

From the former, he has derived the material for thatching the roof, and from the latter for the frame-work and sides. From the leaves, he has woven the hat which protects his head, and the basket in which are borne home from the depths of the forest, the luscious fruits which the Creator has prepared for the use of man. The husks yield the cordage that confines his canoe, and the fuel with which his meal is prepared. From the shell of the nut he has carved the vessels in which his food is served; while the oil expressed from the ripened fruit helps to furnish these children of nature with many a savory repast. There are the Plantain and the Banana, and the lofty and beautiful super-palm, with its massive clusters of golden and scarlet fruit, and the Cabbage palm, whose radiant crown of leaves waves one hundred and sixty feet above his head. The orange and the lemon, the mango and fig, are there, and the Bread-fruit tree,

that holds forth on its wide extended arms its annual offering of unleavened loaves.

HOW TO DECIDE THE CHESS QUESTION

BY AGRICOLA II., LANSING, MICH.

I was much interested in the articles in the January and February numbers of the *Monthly*, on the subject of wheat turning to chess. It is a subject to which I have paid considerable attention, believing it to be of much scientific importance. I cannot overlook the firm belief which a large majority of our practical men entertain; and when this belief is opposed to the express declarations of science, there is ground for investigation and study. I think the facts stated by the *Canada Farmer* correspondent, are the strongest I have ever seen in proof of the transmutation theory. Whether wheat does or does not change to chess, I am not as yet fully convinced; but this much I believe, that if it does so change, then wheat and chess are *not* different species. Perhaps, when the truth is arrived at, it will afford another proof of the doctrine that the lower plants are arrested forms of the higher. The fact that we cannot by cultivation bring chess back to wheat, does not overthrow the supposition. If nature, for any reason, fails to fulfil her usual functions, we cannot always, by efforts of our own, make good the defect. Why wheat should be "arrested" before being brought to perfection, any more than corn or potatoes, I am quite unable to say. In short, I believe the subject is obscured and in doubt, which science has as yet failed to make plain.

The explanation suggestion by "Skeptic," may possibly meet the circumstance related by the Canadian correspondent. I think the experiment, with a little variation, will be worth repeating. In sowing the wheat in the same manner as before, let it be in some particular form, as for instance, bring out the figures 1865 or certain letters of the alphabet. If, then, in just the form in which he has sown the wheat, chess makes its appearance, it seems to me that the fact may be taken as rather strong circumstancial evidence! The cracking of that nut by the scientific, I think would be amusing if not instructive.

MEDICAL PROPERTIES OF THE "NEW JERSEY OR PENNSYLVANIA TEA."

BY O. B., FURNESS P. O., BERKS CO., PA.

The *Ceanothus Americanus* (New Jersey Tea—Red Root), is a small indigenous shrub, growing throughout the United States. The root is astringent, and imparts a red color to water. It is said to be useful in syphilitic complaints, in which it is given in the form of a decoction, made in the proportion of two drachms of the root to a pint of water. Schoepf states that it is a purgative.

The leaves were used during the Revolutionary war as a substitute for Tea.

Dr. Hubbard recommends a strong infusion of the dried leaves and seeds as a local application in aphthous affections of the mouth and fauces, and the sore-throat of scarlitina, and as an internal remedy in dysentery.

MANAGEMENT OF FRUIT TREES.

BY A "MONTGOMERY COUNTY FARMER," GWYNEDD, PA.

I have been very successful in my management of apple trees, and thinking I might serve the *Gardener's Monthly*, which has often given me good ideas, by giving my experience. I offer it for your acceptance, thinking my ideas are a little different from any that I have seen in your journal, and as they have served my turn pretty well, may be useful to others.

I agree with you that there is no harm in leaving grass grow under the trees, if it is cut short two or three times a year for the first year or two; but the plan is rather troublesome, and I think putting ashes is better. I use all my coal ashes every year for my apple trees, extending the circle as the tree grows. The first year when the trees are planted, I set them in a hole about three feet over; without trenching the ground over, and "making one hole of the whole field," put in a wheelbarrow full of manure, well rotten, and set in the tree. Then I fill about three inches deep of ashes all over the three feet hole. No grass, or any weeds to hurt, will grow through these ashes; but it does the reverse of seeming to injure the tree. The next year I put ashes so as to cover four or five feet of a circle, and so on every year for three or four years. After that the tree can take care of itself, and I will agree with you, that grass is rather a benefit than an injury; at any rate, I would never dig or stir up about the trees. Ashes I find an injury when dug into the ground; but certainly they are of immense benefit when put on the ground around the trees in the way I say.

Another point. I have great belief in whitewashing fruit trees, call it an odd Dutch notion if you please. Put a little soot and soap in the whitewash, and it will kill all the eggs of the noxious insects hanging by the thousand under the loose bark: it pulls off all the loose bark, with its speckled moss-looking stuff, and leaves the stem with a skin as clean and smooth as a sucking pig. With the soot in it, there is nothing glaring, for I do not like bare white-wash. I have heard men, who have read more than I have, say it must be unhealthy, and must be bad for the trees, as it must clog up the pores of the bark, and must bring disease; but I have done this so many years past, and never had any thing but good trees, that I feel like the old woman who, when told tea was a slow poison, said, "Slow indeed, I have drank it sixty years, and it has not poisoned me yet." I had better add, that my experience is confined to Apple and Peach trees.

ORCHIDEÆ.

THEIR USE, CULTURE, AND VARIETIES.

BY WILLIAM JOYCE.

(*Continued from page* 47.)

There are about 250 species of Orchideæ in cultivation. A few of the most popular species I will mention:

Cypripedium. There are 9 varieties. They do best in pots. C. barbatum, native of Java; C. guttatum, spotted, native of Borneo; C. insigne, noble native of Nepal; C. venustum, Nepal.

Calanthe. There are 7 varieties of this species in cultivation. Does best in pots. C. veratrifolia, plaited-leaved, E. Indies; C. viridifolia, greenish-leaved, Assam.

Bletia—7 varieties. B. Tankervilliæ, China. This common but beautiful species, the first plant of which that flowered in England, was cultivated at Apperly Bridge, near Bradford in Yorkshire, in 1776, and had been sent there to Mrs. Hird by her uncle, Dr. Fothergill, in a black Chinese pot, full of stiff loam, in which it had been imported. It is a very strong grower, and wants plenty of pot room, and delights in fresh loam and rotten stable manure, and plenty of water while growing; when the plants are done blooming, they should be cut down to the old bulb.

Dendrobium—52 varieties; does best in pots. East Indies. This class climb and twist themselves about the branches of live trees, or throw down their long shoots, similar to the Mistletoe in England; the flowers are generally very beautiful, highly fragrant; they vary from a deep yellow to nearly white; all the species are easily cultivated. To flower this species to perfection, the stronger they can be grown the better they will bloom. After having made a good growth, they should be watered very sparingly, so as to give the plants a good rest, until the flower-buds begin to swell; the plants should then have a little more heat, and watering increased. D. speciosum, New S. Wales; D. nobile, China; D. densiflorum, dense-flowered, Nepal; D. Devonianum, Khoosea,

Oncidium—69 varieties. These are among the most beautiful of Epiphytous plants, conspicuous by their long loose panicles of olive-colored or yellow flowers. All the species are easily cultivated, and like plenty of heat and moisture. O. papilio, Butterfly-plant, Trinidad; O. flexuosum, zig-zag, Brazil; O. altissimum, sharp-petaled, W. Indies.

Catleya—24 varieties. Named by Dr. Lindley after William Catley, an early friend and munificent encourager of Botany. A superb genus of bulbous Epiphytes, with fleshy leaves growing in pairs, and large violet or yellow flowers. C. crispa, curled, Brazil; C. libiata, dark-lipped, S. America; C. mossiæ, Mrs. Moss', South America.

Cymbidium—7 varieties. All the genuine species are terrestrial, and are rarely found growing upon trees. C. tripterum, triangular-fruit, Jamaica; C. lancifolium, lance-leaved, East Indies.

Maxillaria—14 varieties. The labellum, when looked at sideways, resembles the maxillæ of some insects, all fine South American plants, with plaited-leaves and showy flowers. They are easily cultivated, like other Epiphytes.

Vanilla—2 varieties. The fruit is a long cylindrical pod, very like the sheath of a knife. The species of this genus, like many other Epidendra, are falsely called parasitical; but they are no more so than our Polypodium vulgare, which is often found growing on the trunks of trees, especially pollards, rooted in the decaying bark. They shoot out roots at every joint, like the ivy, and may be grown, either on a piece of a rotten trunk of a tree, or planted in a pot of rotten tan mixed with potsherds, and the stem trained against any surface which it can root into; they require very little water.

Zygopetalum—13 varieties. Grows best in turfy peat, a little loam and leaf mould, has thick fleshy roots, and requires plenty of pot room.

Gongora—9 varieties. Its flower spikes hang down like ringlets. It thrives well in pot or basket.

Stanhopea—19 varieties. They must be cultivated in baskets, and suspended, as they shoot down their flower spikes from the bottom of their bulbs.

Aerides—16 varieties. To this genus the name of Air-plant is most properly applied. The true species of this genus are beyond all comparison the most delightful productions of the vegetable world.

Our space forbids a further enumeration of this splendid and interesting order of plants.

The Gardener's Monthly.

PHILADELPHIA, MARCH, 1865.

☞ All Communications for the Editor should be addressed "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

For Terms of Subscription see second page cover.
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Volumes 1, 2, 3, 4 5, and 6, unbound, $1 75 each.

BEDDING PLANTS AND FLOWER BEDS.

One of our correspondents in last year's volume, has some excellent remarks on the misapplication of the term "following nature," in gardening matters. And it is the fault of all our treatises on gardening, that this phrase is so often loosely used as to lead students astray. Like the pronoun *it*, in grammer, it is as often used to cover up the want of an idea, as to really express one.

Our gardening has been very much spoiled by the meaningless "following nature" recommendations. Gardening should be truly a *work of art*, and, properly, should contrast as much with nature as possible. Our scenery is naturally too grand and gorgeous to copy. In some European countries, where the surroundings are tame, what is called the 'natural style' of gardening is appropriate. Scenery can be created by art to look far superior to the natural run of the country; but for us to be making little cascades in full view of Niagara, or rock work by the side of the Wissahickon hills, or fish ponds near our magnificent lakes, seems too small a business to suit an American idea. Even when far away from these splendid natural pictures, their little imitations afford no pleasure, because Americans travel so far and so often the noble originals are mentally ever present, and the contrast is continually to be made.

Even in England, the garden of the world, and particularly the parent of the 'natural style,' this system of Landscape gardening is falling into discredit. Artificial work is now very popular in gardens; and the new gardens of the Royal Horticultural Society are almost as artificially arranged as the Dutch gardens of old.

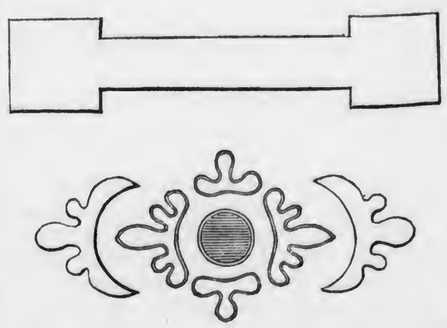
Mr. Kemp's new edition of his "Landscape Gardening" has just been received, and the contrast between it and the older works in this respect is very striking. In fact his own teaching, so far as the *theory* of gardening goes, is strikingly at variance with his plans and illustrations, so profusely given. Squares and angles abound. Set beds, and sets of beds,—straight walks, stiff terraces, and method and system, are the rule. No doubt this is correct. All that we would have borne in mind is, that there is a difference between the artificial and the *unnatural*.

Our fathers used to cut evergreens into the shape of Peacocks and Penelopés, and the Japanese trim and train Pine trees to look like fans and bobtails, and all sorts of rare and curious things. Now we are quite sure, if any one were to find an evergreen tree growing wild, which had the exact appearance of a bird or other animal, he would not part with it for a small temptation; and any nurseryman who could possess such a curiosity, would rapidly 'strike oil.'

Talk as we will, these contrasts always please. The more natural they look of course the better. Barnum's woolly horse would not have 'drawn' heavily, if the wool had been botchingly stuck on. The topiary art went out of fashion, not because of any fault of its own, but because it was so clumsily performed as to become mere common child's play.

We would have our friends bear these things in mind in arranging their gardens the present season. Hundreds of little fancies may be attempted, which, if neatly done, and judiciously arranged, will prove well-springs of pleasure for the whole season,—and this is particularly true of arrangements of beds and the selections of flowers.

Set beds of flowers, whether arranged in certain harmonious designs, or in ribbon lines, invariably give satisfaction, and afford much scope for judicious arrangements of color and form. The following sketch is a very good design for a small garden plot, looking from the elevation figured:



We have given many other plans in back volumes, from which selections can be made.

In the selections of bedding plants, there are

few things which do so well, and are at the same time so effective, as Tea, China or Bourbon Roses, when pegged down and made to cover the beds; and the class of Scarlet Geraniums, or as they are now called by the chief English gardeners, Nosegay Pelargoniums. There are now scores of shades of color, from deep scarlet to pink, and white; and they stand our hot summer suns remarkably well: blooming profusely throughout the whole season. The old Tom Thumb is an universal favorite: but there are others now equally valuable for bedding purposes, and very distinct. Of a deep rosy pink is *Christina*, which is indispensable; *Stella Nosegay* is a fine dark scarlet; *Madame Vaucher*, the best pure white; *Helen Lindsay*, a very deep rose; *Crystal Palace*, the rival of Tom Thumb; *Lord Palmerston* we regard as the most distinct one we have yet seen. Last year we saw over fifty new ones in bloom; but several seasons seem necessary with these, as with other things, to establish general characters for them. Those we have named we will however stand responsible for their good characters.

THE LEATHER TRADE--SUMAC.

Last spring our friend Paschall Morris, in his useful little *Rural Advertiser*, referred to the recent discovery in this country of a new process for tanning leather with *Solidago canadensis*. We are not aware that our usually wide awake countrymen have given much attention to the hint; but in France, Paschall Morris' observations have been translated and reprinted, and the result is a demand on this country for the Solidago seed. While reflecting on this, a friend reminds us that the Sicilian Sumac is now in such demand in this country that it brings *two hundred and fifty dollars* per ton, and scarce at that.

Why cannot we raise own own Sumac? The species from which the Sumac of commerce is obtained, is a native of the south of France and the Mediterranean coast, — the *Rhus coriaria*, or Leather Sumac of the botanists. We do not know that the plant has ever been tested to endure our climate. If it has been introduced here, it is not in any collection of trees we know of now, which would indicate that it will die out, and is unfit for our climate. So many things from the Mediterranean live here, that one would suppose there would be no difficulty with it; but the Rhus family is a capricious one in this respect. The *Rhus cotinus*, from central Asia,—the common Mist tree of our gardens,—is quite hardy in our severest winters; while the *Rhus succedaneum*, from a part of Japan whence we get so many hardy things, will not live here in quite mild seasons. It is worth while for some one in the leather interest to re-import some seeds, at any rate, and try the Leather Sumac fairly.

Our Rhus family ought to have a good overhauling about their economic uses. All over the globe they have been turned to good account. Other countries have but few species compared with ours: we have ten distinct species in the United States, besides many varieties.

The Mist tree, heretofore referred to, has wood which dyes of a beautiful yellow color. This wood is, in the 'Drug language' of Europe, "Young Fustic,"—the true Fustic being allied to our Osage Orange. The 'Mist' of the tree, while yet succulent, is very astringent, and might be turned to useful purposes. The celebrated Japan Varnish is made from the *Rhus vernicifera*; but it is now clearly ascertained that this tree is nearly identical in all its properties with the *Rhus venenata* of our country,—the Poison-Ash, or Swamp Sumac, too well known to many of us by its virulent properties, and the more likely on this account to be of vast service when turned to proper uses.

The *Rhus typhinum* (Stagshorn Sumac) has actually been employed for tanning purposes in times past; and that it has fallen into disuse is, we imagine, only that the foreign product of *R. coriaria*, could be imported cheaper than our own could be collected. Though spread over the whole United States, from Canada to Florida, it is not abundant, we believe, in any one locality; but, as it will grow in the poorest waste places, among rock, stones, etc., where little else will; if found to be what is wanted, it would be a good paying crop to grow.

The common dwarf Sumac, which is so abundant over the whole Union, on every barren hill and rocky glen, and which gives our landscape scenery, in the fall, such renowned and matchless beauty, is the *R. glabra*, or *R. elegans*, of some old botanists. This has also been employed in tanning; but not, we believe, so effectively as the others,—careful experiments might find it more useful than now supposed. Other economic uses might be found for this plant besides tanning purposes. A beautiful black ink-like tincture can be made from the wood, boiled with the berries; and from the berries themselves, a beautiful red dye can be prepared. The acid contained in the berries is supposed to be bimalate of lime.

Rhus copallinum, or Copal Rhus, by its name might be supposed to have some relation to the varnish producing species; but we are not aware

that it is particularly favored in this way, and suppose its name is rather in reference to its shining leaves, which appear as if varnished. It may be worth looking after, however, by those disposed to investigate the virtues of the Rhus family. By the way, we may here correct one of the hundreds of errors in Wood's, otherwise very useful, "Class Book." He says, *Rhus pumila*, of Michaux, is from one to two feet high; and that *R. copallina* is not "half the height" of *C. pumila*. The Copal Rhus in low rich grounds, grows from eight to ten feet high; and in the dry, poor sandy soils of New Jersey, where it abounds, it is usually from two to four feet.

The whole tribe is rich in gums. The celebrated "Hog Gum" of West India Islands, is from *Rhus metopium*, and the Japan Wax is from *Rhus succedanium*,—both too tender for the Middle States; but will no doubt 'come into play' when the labor question in the Southern States has full play to develope itself.

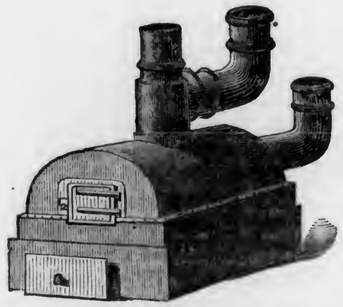
Probably the *Rhus aromatica* of the South-western States, and the *Rhus laurinia* of California, will also prove profitably ceriferous,—but we can merely throw out the hint.

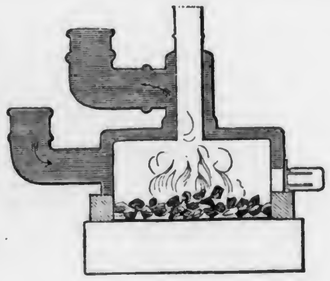
The whole subject is, we think, worth serious enquiry; and, to say the least, deserves as much attention from Congress as the flax substitute for cotton, on which, just now, thousands are being foolishly expended by the nation; for, unless we intend the cotton growing States to be to us a foreign nation, it is hard to understand what we want a substitute for.

PORTABLE BOILERS.

One of the most desirable things that could be introduced, would be some contrivance by which one could turn a Piazza from a nice shady summer promenade, into a conservatory or winter garden at pleasure.

There is no difficulty in doing the thing were questions of heating out of the way. There have been contrivances of the kind attempted, introducing the necessary warmth from heaters, but this kind of heat is never satisfactory to plants. If pipes could be so arranged as to be readily put together, and taken apart and put away, one difficulty would be got over. The boiler question, we think, could be settled by the use of Myer's Portable Boiler, of which the following is an illustration:





No doubt this idea could be still more perfected,—as all first-hand inventions can. We have not seen one of the boilers in use, but judge from appearances it will be all its maker claims for it.

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.

OUR CORRESPONDENTS.—Never since the commencement of our magazine, have we felt more proud of our contributors than we do at the present time. Our pages have never been more varied, nor the articles themselves richer. Our friends cannot compliment us more highly, than by this profusion of valuable free-will offerings. We have given our time and what intelligence we may possess freely from our love of Horticulture and the public good, and it is pleasant to find ourselves so ably seconded in the same course. We say that our services are given freely, for the nominal sum we accept for our editorial supervision from the proprietor, does not pay the extra supervision we have to pay for in our nursery establishment, which otherwise we should be able to attend to ourselves. We look on our connection with the *Monthly* as a labor of love,—as our free contribution to American Horticulture;

and it is very gratifying to us to find the sacrifice so appreciated and so ably supported. To our numerous friends, whose contributions have been published, and others whose favors are on hand, and are yet to appear, we return our best thanks.

The publisher is also in good spirits. He informs us that the circulation of the *Monthly* this year is greater than since the war began; many of those who have by circumstances been lost to us, returning to their old love. Altogether we enter on the new season, with a good feeling all around.

MR. JAMES NELSON AND DR. GRANT'S GRAPES. —*H. P. Byram.*—In the February number of the *Monthly*, Mr. James Nelson details his experience in some business transactions had with Dr. Grant, in which my name is implicated. Mr. Nelson is courteous and gentlemanly in the manner of making his complaint, though he evidently has not been well treated. An explanation is due, not only to him but to myself, so far as my agency is involved in the matter. The editorial comments accompanying the article, so far as they relate to me, are entirely gratuitous and unjust.

Mr. Nelson states, that in 1859 he ordered two grape-vines from Dr. Grant, one the highly puffed Anna, another the ToKalon. Two vines came, one supposed to be the Anna, and the other the Diana, with the statement from Dr. Grant that the Diana was a better grape than the ToKalon. When the vines came into bearing, they both proved to be the Diana. I well know how perplexing such disappointments are to one like Mr. N., who wishes to prove all fruits. After stating the case to Dr. Grant in several letters, Mr. Nelson received the following note, written by myself, as published in the February number of the *Monthly*:

"As you say the Anna sent proved to be the Diana, and as we wish to be *more than right*, we will send you by mail next week, another Anna, *free* of charge, leaving you the gainer of one Diana, &c. C. W. GRANT, per H. P. B."

During the summer of 1863, while I was recovering from the effects of the amputation of a leg near the body, I received several letters from Dr. Grant, urging me, as soon as I could get about, to come to Iona and assist him in his business, as my more active engagements had now evidently to be abandoned. The Doctor continued to urge me to come and assist him, *giving as a reason*, that so many mistakes were constantly occurring in the management of his business, that he specially wished my assistance. On the 26th of October, 1863, I took my position in the Office. From the date it appears, that when I wrote above note to Mr. Nelson, I had been in the office a little more than two weeks. Much of the business was new to me, and, of course, at first I had frequently to enquire what course to take, what answers to make in certain matters of which I had no previous knowledge. I presume, at this early period of my experience, I was governed in my reply to Mr. Nelson by the advice of the Bookkeeper. In all such cases, where vines were promised, I at once reported the fact to the Bookkeeper, whose duty it is to enter the same on the order-book, to be forwarded to the packing-room, and the vines sent as promised. After having written to Mr. Nelson, and reported the vine for entry on the order-book my duty in the matter ended. There was nothing strange in the fact that the vine finally failed to go, though I am satisfied the omission was *not intentional*.

After a more full acquaintance with the run of the business, when any similar errors were reported I generally used may own discretion in correcting them, always aiming to be more than liberal, and though not of my department, I further endeavored to see that the order was despatched. During my ten months stay in the office, very many letters were received from parties, expressing their full satisfaction with my course in correcting such mistakes. But the practice of substituting one variety when another is ordered is always wrong, and in many instances I took occasion to enter my earnest protest against such a course.

Now, Mr. Editor, I see nothing in my note, whether based upon my own judgment, or upon the advice of others, so "refreshing to a hot novelty hunter." My experience north of Pennsylvania is, that the Diana, with all its faults, is greatly superior to the Anna, however much it may have been puffed. Nor can I see the point in your question, whether this H. P. B. was formerly the editor of the *Valley Farmer?* During the six years and upwards that I had charge of that publication, I had reason to be somewhat proud of it. You are also quite mistaken in your views in supposing that in my "showing up of the Iona practices," that "Dr. Grant and myself understand one another," in regard to this new method of "cheap advertising," for the Doctor has paid pretty well of late for his advertising.

The 'showing up' of the forcing process as practiced at Iona, was prompted on my part, probably by the same motives that actuated you, and the press generally, in exposing the manner of the

award of the "Greeley Prize" to the Iona grape, namely, the public good.

[It appeared to us that to sell an Anna grape as the "best of all grapes," for three dollars, and then send a fifty cent Diana as "equal in value," was 'cool.' We supposed H. P. B. wrote as the representative of Dr. Grant, and as if it were Dr. G. writing through him. Mr. Byram now explains, he was rather giving his own private estimate of the relative values of the grapes. However, we are willing to give Mr. B.'s letter without further comment, in accordance with our rule of "more than justice" to all. We have taken out only one sentence referring to Dr. Grant's *practical* estimate of the Anna on his own grounds, as we do not wish to afford the Doctor a just claim on our space for a reply, which would be turned to "cheap advertising" account.

We are sorry to find Mr. Byram disclaiming the idea that the whole trouble is a "good joke between friends;" for indeed we thought it was a pretty advertising speculation—leaving the morality of the thing to be settled by themselves hereafter, in the manner of Julius and Sambo with the chickens. A well abused man in public life makes much more in the long run than the one who rusts away unknown; and we suspected the parties were acting on this philosophical law.

We had our ideas from the fact that, though in a *general way*, Dr. Grant "positively and unequivocally" denies Mr. Byram's statements; *particularly* and *in detail* he seems to us to admit them—merely suggesting that the *reasons* for his practices were honorable, and that the *motives* imputed to him are wrong. In his explanation, in the *Country Gentleman*, which, though in the Horticultural columns of our contemporary, we suppose in this instance is not a specimen of "cheap advertising," he admits some Ionas had screens from four to six feet long,—about one-eighth of the vines,—not for any purpose of shelter, as suggested by Mr. Byram, but to break off the chilling fogs! He seems also to admit the use of sashes, to see whether thrips would harbor under them as badly as when the vines are exposed! Having had so little experience with growing grapes under glass, he could not know, as gardener's do, that they would harbor worse. Had Mr. Byram known how limited the Doctor's experience on this point was, he would certainly not have supposed the object was was to try and produce grapes of better quality than could be naturally grown.

And here we supposed was to be the grand turning point of the drama. Mr. B. was to apologise for misconstruing the Doctor's motives. The Doctor was to admit the misconstruction to be natural under the circumstances. Mr. Byram then to follow with an apology. Then "kiss and be friends," and all lie down together, the lion and the lamb in one happy family, with no one the losers, but the poor unfortunate publishers, whose unpaid labor on types and printing-ink, was to make the Iona and Israella "household words."

As Mr. B. disclaims his share of our plan, all we have to say, 'tis more the pity to spoil so nice a thing. We hope the Doctor will let us have the planning of his next "advertising" campaign; but we stipulate in advance for the half of the "ten thousand" some say has been already realized on "Iona stock," since the agitation broke out.

Death of one of our Contributors.—Our readers have suffered a severe loss by the death of Miss Elizabeth C. Morris, of Germantown, who, under the signatures of E., E. C., M., and other initials, contributed some of the most valuable articles that have appeared in our pages. Highly educated and accomplished,—a superior Botanist, and an excellent Horticulturist, we lose her from our circle with sincere regret; a feeling that will be shared in by numbers all over the Union, to whom she has been long known, and highly respected and esteemed.

Native Climbing Vine—*F. S., Tipton, Ind.*—In the woods in my neighborhood, I find in great number a climbing plant which resembles in growth as well as in color of its wood, the *Wistaria chinensis*. I have not seen it when green, and can therefore give no description of foliage and flowers. Only so much may I say: it appears to be a rapid grower, running up the trees to a height of over 30 feet, often curiously twisted and wound, as the enclosed piece of a vine will show. I also enclose a cluster of its seeds, which are yet hanging on the vines. Will you be pleased to inform me what plant it is?

[This is the *Celastrus scandens*, one of the prettiest of our native climbers, and which is by far too seldom seen in collections. It belongs to the same family of plants as the Burning Bushes or Euonymus. The family in fact takes its name from this plant—*Celastraceæ*.

Hot-water Tanks—*Mr. A. Cummings, Reading, Mass.*, writes:

"Allow me to say that the 'Tank,' illustrated in the *Monthly*, March, 1864, meets my entire satisfaction. No leak has yet appeared, or any defect whatever. I have never seen its equal for propagating purposes. I am building a span roof house, 25x115 feet, which I shall heat by this method, believing it superior to iron pipe. I have had three tanks in use two winters, in three separate houses. The one described is superior to any emergency."

Grapes—*P. S. B.*—We did not insert your paper because we did not think it any credit to our magazine. It is a mistake to suppose that we publish every thing sent to us. We regard it as a compliment to the intelligence of the writer to be allowed to appear in our pages,—as much as it is a pleasure to us to receive the contributions. If you had been pleased to write more civilly about your communications we might not have thought it necessary to be so plain in our reply.

Carica Papaya—*F. S., Tipton, Ind.*—"Will you oblige a constant reader of your valuable *Monthly*, by informing him—Whether or not the *Carica Papaya* has been introduced into this country, and if so, who has got it?

I would like to get a pair of this plant, so desirable for their graceful foliage, as well as for their delicious fruits. I have not seen it mentioned in the *Monthly*, although it has been fruited in Germany for several years."

[There was an account of the ripening of this fruit in Europe, in a recent number of this magazine. It would require very large houses to bring them to perfection. It has been frequently in American gardens, and can probably yet be had from the collections of Parsons & Co., or R. Buist, who pride themselves on such rarities.]

Mr. Daniel Barker, one of our original contributors, has recently returned from a sixteen months sojourn in Europe. He has spent his time in making selections of the best varieties of seeds, which his experience of this country taught him would be the most useful; and has no doubt stored up many original ideas, which he will, as occasion offers, generously give to our readers, as he has heretofore done.

Planting Seeds—*J. H. H., Quincy, Ill.*—Please let us have something in the *Monthly* in regard to planting tree seeds, particularly Pear, Cherry, Plum and Evergreen seeds.

[We have on hand an article by an experienced hand, too late for this month, but which shall appear in our next.]

Seed Dealers—*J. M., Hamburgh, Pa.*, writes: "Will you please inform me of the most Northern seed dealers, 'except the Canadas?' and also as to their responsibility to deal with? By doing so at an early date, you will much favor one of your subscribers."

[This is a delicate subject to give advice on, and, with every disposition to oblige, one which we have invariably followed the rule of avoiding. We cannot recommend in business matters.]

Proper Time to Gather Larch Cones—*R. D., Waukegan, Ills.*—Can you inform me. through the *Monthly* or otherwise, the proper time to gather European Larch Cones for seed? They are not ripe in autumn, like Evergreen Cones, and I notice the Grosbeak, or Crossbill, works on them in spring.

[Almost all conifera have the seed ripe in fall, though the cones appear green. When the leaves of the Larch fall the seeds are ripe, however green the cone externally appears. We have never known the European Larch to perfect here in the East. The cones are here brown long before fall.]

Michaux Sylva.—*J. C., Chillicothe, O.*, writes: "I have a new copy of "Michaux," 5 vols., $60, but Sequoia gigantea in not in it,—strange?"

[We have not seen the new edition, but we suppose it is merely a reprint of the old one, with a new date on the title page merely. It is a valuable work as far as it goes; but it describes no new trees that have been discovered since Nuttall was in the United States.]

Hubbard Squash.—A correspondent, a month or two since, asked for a receipt for cooking this excellent vegetable. Mr. Gregory promises us one for our next number.

Books, Catalogues, &c.

How to Get a Farm, and where to Find One. By the author of "Ten Acres Enough." Published by J. Miller, New York.

This has been some weeks on our table, waiting attention, which we have only just now been able to give it. It shows where land most profitable for agricultural purposes can most readily be obtained, and, besides, contains many valuable suggestions to those who contemplate exchanging a life of harass-

ing dependence in the city for one of independence in the country.

TRANSACTIONS OF THE NEW YORK FARMERS' CLUB OF THE AMERICAN INSTITUTE.

We have received from Mr. J. W. Chambers, the present Secretary of this Institution, a complete set of these Transactions, for which we return our best thanks. We get so accustomed to read weekly the reports of such Societies, that we have no idea of their great value until looking back over a preserved collection of them. These five volumes contain a vast amount of information, and we regard them as very valuable additions to our library.

TRANSACTIONS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY FOR 1864. Also, ADDRESS OF PRESIDENT C. M. HOVEY at the Laying of the Corner-stone of the New Hall of the Society.

A very interesting feature of the reports of this Society is that the Chairmen of the various Committees make an annual report, reviewing the ground gone over by each separate Committee during the season past. Mr. J. F. C. Hyde, the Chairman on Fruits, writes a very interesting report, from which we learn that grapes were exhibited, from H. H. Hunnewell, on the 30th of January, in as good condition as when ripe, on the 20th of September previous. They were of Lady Downe's Seedling. Josephine de Malines Pear, on the 6th of February, from H. Vandine, in very superior order. On the 28th of May, Mr. Hollbrook exhibited fine forced Crawford's Early Peaches, "the finest ever shown on their tables" at any season. Of Strawberries, La Constante, from Hovey & Co., excited great admiration for their size and appearance. Mrs. T. W. Ward placed on the table the finest Hovey Seedling Strawberry; but, "not being a member of the Society, could receive no premium." The Pennsylvania Horticultural Society is more liberal. Mrs. Ward could receive a premium there, whether a member or not. "Hovey's Seedling is the best variety grown, and next Brighton Pine, and Jenny Lind," but "there is room for improvement." The Cherry "is fast disappearing from our market." Of Raspberries, "none were exhibited worthy of a premium."

Dana's White Transparent Currant will "rank as the largest White Currant." Mr. Dana "has a new white seedling, less acid than any now cultivated, which promises to be an acquisition for table use." La Versailles is the "best of the large Reds."

Gooseberries.—Houghton's and Mountain Seedling continue to be the most popular.

Blackberries.—"Dorchester best for table." "Lawton yields more juice, and may be best for wine."

Few "Plums have been exhibited." "Peaches have increased, and are a more certain crop than formerly."

Grapes.—Roger's Hybrids were not ripe when Delaware, Concord and Allen's Hybrid were. Creveling justified all that has been said of it. Adirondac was fully ripe by the middle of September. "It was decidedly of high flavor, fine black appearance, and of good size, both in berry and bunch." Iona, "excellent quality, superior to Catawba." There can be no doubt of its being a valuable grape for a portion of the country. Of the report on the Rogers' Hybrid Grapes, we do not well understand the Committee. They say: "Your Committee do not feel disposed to give a decided opinion on the merits of any of these. Some of these varieties do not ripen early enough to be valuable; but, as the specimens we have tried have been mostly produced on young vines, it is unfair to fully decide upon their merits." As the Committee say of the Iona, "it is one of Dr. Grant's new seedlings, and has been in the market but one or two years," and yet had no hesitation to "fully decide" on the good character above given, from fruit from these "young vines," it is difficult to understand why "young vines" should be a stumbling-block in the way of Rogers' Hybrid. Again, they would not advise the public to plant them, which seems odd if they have not been able to decide on their merits, and yet regret that they were "sent out under numbers, instead of names," which does not seem a matter worth regretting if they are not worth planting. It seems to us outsiders, from this report, as if the Committee would "damn with faint praise" what, either with or without reason, they have not the courage to condemn.

Apple-culture is not equal in encouragement to former years.

The *Pear* is the great fruit of the Massachusetts Horticultural Society.

The Vegetable Committee, by Abner Pierce, *Chairman*, report that the Cook's Tomato "is equal to any we have, and by some pronounced superior." Of the Yokohoma Squash, the size is against its profit for early cultivation.

The Library Committee, F. Parkman, Chairman, make an interesting report. One-third more books taken out for reading than last year; and thirty-three new volumes bought, amounting to $410.66.

The Society's income for the past year was $15,102.71; expenses, $7,255.49. They have paid out $58,154.55 on their new Hall.

The Flower Committee's report, though first in the list, we have left to notice last. It is so full, we hesitate about making a synopsis of it. Mr. E. Augustus Storey is Chairman. The Gladiolus is the chief flower, in which great and growing popularity is centred. The best the past year was considered to be in the person of Madame de Vatry, and the next Compte de Morney. "On Saturday, September 10th, in Mr. W. C. Strong's collection, was a remarkably fine flower, a sort of cherry-crimson, shaded with violet, and clear white centre. It looked like a seedling from Compte de Morney, and of the same form and habit of that fine variety. This was considered the finest flower of the season, and received a first-class certificate."

HISTORY OF THE AGRICULTURAL ASSOCIATIONS OF NEW YORK, FROM 1791 TO 1862. By W. Bacon, Richmond, Mass.

Acknowledged, with the thanks of the editor.

The Catalogues of our Nursery and Seed firms are not as numerous as heretofore, most of them seeming to prefer advertising more freely in our regular columns. So far, we find on our table:

RETAIL AND DESCRIPTIVE.

Ellwanger & Barry, Rochester, N. Y. Descriptive Catalogue of Fruits. No. 2. Trees and Shrubs. Both handsome pamphlets of 60 pages.

W. W. Beebe, Dubuque, Iowa. "Orchards and Fruit."

N. L. Wood, Smithfield, O. Fruit, Ornamental and Plants. 26 pages.

J. M. Jordan, St. Louis, Mo. In addition to publishing a very neat Catalogue, with full descriptions of flowers, fruits, and ornamental trees, Mr. J. gives a kind notice of the *Gardener's Monthly* in the Catalogue, for which we thank him, and wish his business a prosperous career.

F. Trowbridge, Milford, Conn. Fruit and Ornamentals, with a Treatise on Cranberry Culture.

R. Douglass, Waukegan, Ills. Fruit and Ornamentals.

H. A. Dreer, Philadelphia. Garden Calendar for 1865. A very useful manual for garden use, of 70 pages, free, we believe, to applicants.

J. M. Thorburn & Co., New York. Annual Descriptive list of Flower Seeds, making a tract of 32 pages, in which we notice Tarragon, a rare vegetable, much valued for fish sauces, but of which seed can very seldom be had.

Alfred Bridgeman, New York. Kitchen Garden Seeds, &c.

J. Vick. Illustrated Catalogue and Floral Guide. A beautiful pamphlet of 56 pages.

D. D. Buchanan, Reid's Elizabethtown, N. J., Nurseries. Fruit and Ornamentals.

S. Coffman & Co., Carrol, Fairfield County, O. Fruit and Ornamentals.

Edgar Sanders, Lake View, near Chicago, Ills. Chiefly Bedding Plants.

Plant & Bro., St. Louis, Mo. Garden, Grass, and Agricultural Seeds, &c. 48 pages.

Henderson & Fleming, New York. Spring Catalogue of New Plants. Also one of Flower and Vegetable Garden Seeds.

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

WHOLESALE LISTS.

James & Root, Schenectady, N. Y. Native Evergreens.

J. W. Bailey, Plattsburg, N. Y. Grapes.

A. T. Fish, Rochester, N. Y. Fruits.

Frost & Co., Rochester, N. Y. Fruit and Ornamentals.

H. E. Hooker & Co., Rochester, N. Y. Fruit and Ornamentals.

J. W. Adams, Portland, Maine. Native Evergreens.

James Shepherd & Co., N. Y. Agricultural Seeds.

M. P. Wilder & Baker, Dorchester, Mass. Fruits.

E. Moody & Sons, Lockport, N. Y. Fruits and Ornamentals.

Norris Barnard, Elk View, Pa. Fruits and Ornamentals.

S. Moulson, Rochester, N. Y. Fruits and Ornamentals.

E. J. Evans & Co., York, Pa. Fruits and Ornamentals.

E. A. Bauman, Morrisiana, N. Y. Fruits and Ornamentals.

Edw. J. Evans & Co., York, Pa. Strawberry Plants.

D. H. Schroder, Bloomington, Ills. Grape-vines and Small Fruits.

A. H. Bryant, Buffalo, N. Y. Strawberries.

Rare and New Fruits.

THE BUFFALO STRAWBERRY.—It is natural and proper that we should regard any thing in the shape of a new fruit with a certain degree of distrust until its reputation has been established beyond a peradventure. We are not disposed to go into raptures over a new berry; but a fruit that combines the largest number of commendable qualities, deserves attention and merits distinction. From what we have seen of this fruit, and from what we learn of it from others who have watched it during the past six years, we regard it worthy of notice. It is a seedling produced by Rev. N. S. Smith, and now owned by A. H. Bryant, Buffalo, N. Y. It was one of two hundred seedlings which were produced seven years ago. It has not been offered to the public before this year. The proprietor has been testing and propagating it, determined not to offer it until he was satisfied it was a superior berry for general cultivation to all others. The tests given it has resulted in convincing those best acquainted with it, that it combines more good qualities than are to be found in any other strawberry in this country. We are not prepared to say that it does, because we have not had opportunity to watch and test it. We went to Buffalo the last summer, however, to see it in the field and on the vines, and we give our impressions of it.

1. *The Plant.*—We found it growing in a field of tolerably stiff clay, which had received no water from any source for weeks, and which did not contain moisture enough within ten inches of the surface to pack it—baked and cracked, gaping seams intersecting in all directions. Here this plant was making a remarkable growth. It is true the soil was good, but it had not been manured. The plant is evidently a strong grower, hardy, and has vitality enough to perfect all its fruit; for we failed to find a blossom, during more than an hour's examination, that did not promise to develop into fruit. It is a bushy plant, with broad, dark-green foliage; the fruit-stalks are large and high, carrying the fruit free from the ground. It is productive—quite as productive as the Wilson, we should think. We could not have seen it under more unfavorable circumstances. And yet, while it was not overbearing, it was bearing as well as any variety, with which we are acquainted, could have done under similar circumstances. It is hermaphrodite—fertilizes itself. We are satisfied there is no doubt about this, although the flowers are small, and might be taken for a pistillate at first sight.

2. *The Fruit* is large, regular, uniform in size and shape, dark crimson color, glossy, red flesh, solid, juicy, sweet, with but little acid, aromatic in a high degree, and with a pleasant flavor. Its flavor is not of the *positive* character which we like best; that is, it has not acid enough for our taste, but we think the majority of people will be suited with it in this respect. It is more acid than the Triomphe, and less so than the Russell. It is both firm and solid. It is a firmer fruit than the Russell. It is remarkably solid. We cut open a hundred berries, and failed to find one that was not perfect in this respect. And this is important to consumers. We speak of firmness as distinct from solidity. We should think it would carry quite as well as Triomphe, and better than Russell. But of this we are not satisfied, fully. It is a very attractive berry—far more so than the Wilson, and not inferior to the Triomphe. In beauty and regularity of form, and brilliancy of color, it excels the Russell, as we have seen the latter. Whether it is more productive, we are not prepared to say. Of one thing we are perfectly satisfied—that it merits the attention of cultivators of this fruit for market. We propose to plant it, not basing our action, however, upon what we have seen of it altogether, although we think we should be safe in doing so, but upon the testimony of such men as Benjamin Hodge, Esq., and Hon. T. C. Peters, who have seen it under different circumstances, different years. We happened to meet the last-named genileman in Buffalo at the time of our visit, and he accompanied us to see the fruit. He assured us he would indorse any thing we might say of it in its praise. We do not think he is reputed to be a man of immature judgment, and we know he has no personal interest whatever in it.
R. New-Yorker.

WINFIELD APPLE.—Described by Mr. S. Foster, of Muscatine, Iowa, as one of the handsomest apples he has ever seen, and so say all who have seen it. It is a seedling, the original tree standing in Mr. Winfield's orchard, in his neighborhood. Tree, pyramidal shape, top high, lower branches spreading, thrifty, and quite hardy, having stood many winters of Iowa uninjured; quite productive, a fine crop every year, and some years a very large crop. Fruit, medium size, very round and fair, somewhat resembling Maiden's Blush, but not as oblate, nor as deep a blush, and more of the white waxen appearance—most beautiful; flesh, tender, pleasant acid, very good for cooking, best even in July, when two-thirds grown. Sells readily, and considered the best market apple for August and September.—*R. N. Yorker.*

THE KITATANY BLACKBERRY.—This is the name of a new variety, about to be introduced to notice. It has been cultivated a few years, having been found in the mountains of that name. In the habit and vigor of the plant it resembles the Lawton, and is a most profuse bearer. The foliage is more coarsely serrate than the former, and the berries are longer and more irregular, some of them measuring one and a half inches long, and three inches in circumference. This description very nearly corresponds with the Dorchester, and, like that kind, the berries are sweet before they are quite ripe, and are in eating at the same time, viz.: from the last of July to the end of August. Probably it may be a desirable variety.—*Maine Farmer.*

PITTSTOWN APPLE.—Introduced by Mrs. Van Namee, of Pittstown, N. Y. The editor of the *Country Gentleman* says he has given it a fair trial, not only as a table fruit, but for stewing and baking, and it appears to be a fine variety. It appears to be intermediate between the Fall Pippin and Fall Orange. It is of rather large size, measuring three inches in diameter, each way, roundish, slightly oblong, handsome, smooth and regular; skin, light yellow, often with a fine blush; stem, in a wide and deep cavity; calyx, with long segments in a wide wrinkled basin; flesh, yellowish white, tender, mild, sub-acid, slightly spicy, with a good or very good flavor.

THE PETERS PEAR.—A new pear, raised in 1848, from the White Doyenne, by Rev. Absalom Peters, of Williamstown, Mass. It is perfectly hardy, a vigorous grower, an abundant bearer, and gives crops every year. It bore, the present year, over a bushel of fruit. The pear ripens in Williamstown the first week in August, at the time of the Madeleine. It is, however, said to be a much better pear, about the size of the Tyson.—*Hovey Mag.*

APRICOT SUKER PARA, OR GREEN GAGE.—This splendid variety was received from Syria, together with the now well-known Kaisha and other fine kinds, and is, perhaps, in many respects, the best of the "sweet kernel" section.

The literal translation of the words Suker para is a "bit of sugar," and was given it from the fact of the fruit being often left upon the trees until they become shrivelled, and then eaten as a sweetmeat.

The fruit is of medium size, and in appearance very like a Green Gage Plum, from the smooth surface of the skin, small stone, and entire absence of down, while its flavor not merely equals, but surpasses that of the Green Gage Plum.

It is admirably adapted for preserving, requiring no additions in the form of sugar, &c.—*Chronicle.*

PEAR PRINCESS OF WALES.—This is a very fine variety, raised by the Rev. John Huyshe, of Clysthydon, Devon, who has been so successful in making valuable additions to our collections of this splendid fruit.

It was obtained from the Marie Louise, hybridized with Gansel's Bergamot, and is sister to the well-known Huyshe's Princess of Wales (formerly known as Huyshe's Bergamot).

Dr. Hogg, in the "Gardener's Year Book," for 1864, says:—"This is one of the most delicious and richly-flavored pears I know. The flesh is of quite a yellow tint, as much so as the skin of some pears is; melting and very juicy, sugary, and with a fine, delicate bouquet."—*Cottage Gardener.*

New or Rare Plants.

THE MALE ACUBA.—Among new hardy evergreen shrubs, the most desirable variety is the male Acuba. Indeeed, this may be looked upon as the most permanently useful introduction of modern times. Many have been the novelties recently added to our collections from Japan; but, for permanent importance, none of them come up to this plant, and for this reason: the Common Acuba is a shrub that grows and thrives better in towns and cities than any other evergreen shrub; it thrives vigorously where everything else dies, as some of the gardens of London could testify. To us, however, it has hitherto been a fruitless shrub, but now that we have the male, and as soon as it becomes sufficiently circulated, all the Acubas will be covered with large bunches of berries, about four times the size of those of the Common Holly, and of the brightest glossy red color.

As some little misunderstanding exists about Acubas, perhaps it may be as well to state that the Acuba is a dioecious plant—that is to say, some of the individuals produce only male, and others only female; and that some eighty years ago, the ordinary Acuba was introduced from Japan, but the

plant or plants so introduced happened to be females. By propagation, the whole stock in Europe sprang from the original introduction, and Japan from that time being a sealed country, the male plant could not be obtained. To the celebrated Chinese and Japanese traveller and collector, Mr. Robert Fortune, is due the merit of introducing the first male plant with which we are acquainted. Nothing, in the way of hardy evergreen shrubs, will at all compare with Acubas when laden with their coral-like red berries. Besides the Blotched and Variegated Acubas, Japan has yielded us both male and female varieties, with plain green unspotted leaves, and India gives us Acuba himalaica, which also has plain green leaves. This has proved itself to be a female plant, and a valuable hardy evergreen shrub.—*Cottage Cottage.*

New Hardy Bedding Plant, Sedum glaucum.—It is very dwarf, and of exceedingly close habit, forming a compact mass of silvery gray foliage, which it retains both in summer and winter. For edgings, ribbon borders, or pots, it will be found one of the most useful dwarf plants ever offered.—*English Paper.*

Helichrysum Mannii.—Discovered by Mr. Mann on the Peak of Fernando Po, and on the Cameroon Mountains. It does not appear to be known whether it is an annual or perennial. It is a noble species of the Yellow Everlasting, familiar to our young days, and likely to bring the genus into high favor again. It is a robust, erect, simple-stemmed herb, growing upwards of two feet in height, having numerous lanceolate, half-clasping self-decurrent leaves, which are woolly beneath, and a large terminal corymb of globose showy flower-heads, an inch across, white, with an orange-yellow disc.—*Bot. Mag., t.* 5431.

Quamoclit Nationis.—A fine tuberous rooted perennial climber from Peru, a native of the Cordillera, but cultivated at Lima. It has smooth, twining stems, cordate leaves, and salver-shaped flowers, which have a long whitish tube, and a five-lobed limb two inches across, of a rich orange-scarlet color. It is thought that it will be able to bear our summers in the open air.—*Bot. Mag., t.* 5432.

Saccolabium Harrisonianum.—A fine species, imported by Messrs. Low & Co., from Pulo Copang, in the Chinese seas. It is white-flowered and fragrant. Dried specimens show the racemes to be from 20 to 24 inches long, and one of the plants imported had borne seven spikes. It so much resembles the white variety of *S. violaceum* in general structure, that Sir W. Hooker for some time considered it in another variety of that species; but the five lines on the lip, which are conspicuous in *S. violaceum* are wanting.—*Bot. Mag., t.* 5433.

Begonia Mannii.—Native of Fernando Po. It is a weedy-looking species, with erect simple fleshy stems, ovate acuminate leaves, slightly unequal-sided, and short-stalked fascicles of small rose-colored flowers in their axils.—*Bot. Mag., t.* 6434.

Ada aurantiaca.—Native of New Grenada, at an elevation of 8500 feet. It has drooping spikes of clear orange-colored flowers, which do not expand, but are effective on a well-grown specimen. Flowered in January.—*Bot. Mag., t.* 5435.

Double Pelargonium.—We alluded, at page 1135 to the existence of a race of Double-flowered Pelargoniums, and we find in a recent number of the *Revue Horticole* some particulars respecting another variety of similar character, called Gloire de Clermont, which has been raised by M. Amblard, a horticulturist of Clermont-Ferrand. Our contemporary states that it will take a high place in our gardens, and describes it as bearing flowers as full as a small Ranunculus, and as having been produced from seeds gathered from a semi-double variety of doubtful merit. It appears that seven plants were raised from the seeds of this semi-double parent. Some of them produced, instead of petals, little tufts of green leaves or sepals, compact and imbricated, forming a globular bud, which scarcely opened; others yielded flowers with a little red at the tips of the sepals; a sixth had flowers of a lively color, but they did not open; while the seventh bore magnificent flowers, full, well expanded, and bright in color. The constancy of these features has been proved, for the variety has been propagated, and more than a score of plants of the progeny have yielded their flowers. M. Lecoq, the Director of the Botanic Gardens at Clermont, who describes this very remarkable Pelargonium, observes, that, upon the plant then before him, was an umbel of fine flowers, which, if the foliage were not seen, might be mistaken for those of Lychnis chalcedonica. The variety is said to be of vigorous growth, and to have large, undulating, green leaves, without any sign of a colored zone, although, by a slip of the pen, the new variety is classed amongst the zonale Pelargoniums. The flower stalk is stiff, and bears from ten to fifteen flowers, so arranged as to form a bouquet. The buds are globular; the petals, upwards of forty in number, are disposed like those of a double Ranunculus, and are oval in form, rounded at the top, and of a lively vermilion, with a white eye; the stamens are completely wanting, and the pistil is represented by a small green tubercle. It appears that M. Amblard, not being specially occupied in the culture of this class of plants, is desirous of parting with the stock.

Barkeria Skinneri superba.—A cool house orchid, raised by Mr. Veitch.—*Floral Mag., pl.* 185.

Veronica Hulkeena (Hulke's New Zealand Speedwell).—*Nat. ord.*, Scrophulariaceæ. *Linn.*, Diandria Monogynia. "Quite a new form of Veronica." Native of the mountains in the middle island of New Zealand. In a cool greenhouse it flowered in May; but, from growing at 2000 feet elevation in its native island, it may be expected to be hardy here. Flowers lilac, and in a thyrse like those of the common Lilac shrub.—*Bot. Mag.*

New English Hybrid Perpetual Rose, King's Acre.—The color of this beautiful variety is bright vermilion-rose, reverse of petals satiny; the flowers are extra large, globular, of remarkable depth and exquisitely formed, having large, smooth, shell-shaped petals of fine substance; the foliage is ample, and of a fine rich dark green color, while the habit of growth is all that can be desired, being vigorous and robust.

New Bedding Dahlias.—*Crimson Dwarf.*—Rich red crimson self-color; style of growth compact, and well branched, two and a half feet in height; flowers of medium size, fine form, and profusion of bloom; clear and effective in contrast with lighter shades.

Fireball.—Orange-scarlet, two to two and a half feet in height, the most dazzling in effect of any Dahlia known; flower as round as a ball, borne on firm footstalks, rising well above the leaves; size moderate, intermediate between the show and bouquet varieties; suitable for small masses, or specimens.

Meteor.—Brilliant golden yellow, with a well-branched and compact growth, two and a half to three feet in height; flowers of a medium size (resembling the Bouquet Dahlia); fine form, and a profuse-blooming habit.

Trichinium Manglesii.—This really handsome amaranthaceous plant has been raised from Swan River seeds by Mr. W. Thompson, of Ipswich, and from specimens grown by that gentleman, our figure has been derived. Very little is as yet known of its habits, but it is amongst half-hardy annuals that it will probably find its place in our gardens, even though it be naturally, as some other of our Australian so-called annuals are, of more extended duration. The plant forms at first a tuft of radical leaves, which are long-stalked and oblong-spathulate in form, smooth, and of a deep green color. From among these arise the flowering stems, to the height of one and a half feet; they are furnished sparingly below with lance-shaped sessile leaves, become slightly branched, and each branch terminates in a crowded oblong-oval spike, which consists of scarious rosy-colored bracts, from amongst which issue the rosy purple flowers, these protruding considerably beyond the bracts. Both bracts and flowers are clothed with long, conspicuous hairs. "Few more lovely plants," observes Sir W. Hooker, "have been introduced to our gardens than this, which is one of the most striking of some fifty species known to botanists;" and this encomium we think our figure will be found to justify. Mr. Thompson, who, fortunately, got a few of his imported seeds to vegetate, describes the root as being apparently perennial, throwing up several branched stems, each branch bearing one of the handsome heads of flowers. The copious white hairs, so characteristic of the genus, with which the florets and bracts are clothed, give, he remarks, a singular aspect to the plant, and contrast effectively with the Amaranth-purple petals. Under the lens these hairs are pretty objects; owing to their denticulations, the germination of the seed, moreover, revealed a peculiarity worthy of note. The plumule, instead of rising from between the two unequal seed-leaves, as in most plants, was found to be emitted from a point considerably below them. The same thing occurs, he adds, in Dodecatheon meadia. Trichinium Manglesii was first described by Dr. Lindley, some twenty years since, in the *Botanical Register*, where it is spoken of as a most beautiful plant, with the heads of flowers three inches across. It has not till now, however, found its way into our gardens.—*Florist and Pomologist, iii.* 217.

Domestic Intelligence.

A National American Herbarium.—Two years since, Professor Asa Gray made the munificent offer to the University of Cambridge, Massachusetts, of his valuable herbarium and library, upon condition that a suitable fire-proof building should be erected for their reception, and a fund invested for their adequate maintenance. The subject has been in abeyance until recently, when a banker of Boston liberally offered to defray the cost of the required building, provided others raised a fund to meet the current expenses of the establishment. We rejoice to find that this truly national collection, of the greatest importance to American botany, is in a fair way of being disposed of in accordance with Dr. Gray's views. We understand, moreover, that this herbarium is likely to prove a nucleus, around which other collections of much importance will probably accumulate.

We sincerely hope that, through the well-known liberality of American citizens, this herbarium and library may be put upon such a footing, that Prof. Gray may be so far relieved of its management as to be able to devote himself to the object which we know to be very near his heart—the completion of a Flora of the North American continent. For this great work, Professor Gray has accumulated a very large amount of material; and no botanist is more thoroughly qualified in every way to carry out such an undertaking.—*Natural History Review, London.*

Blight in Pears.—At a recent meeting of the Ohio Pomological Society, Dr. Kirtland is reported as having talked of a new theory concerning the Pear Blight, based upon microscopic investigations by Professor Salisbury, showing that this disease is caused by the propagation and growth of minute fungi in the sap and alburnum of the trees, and giving facts supporting the theory. As a remedy or preventive of these diseases in fruit trees, Dr. K. said the use of copperas, in solution, as a wash for the bark, or syringing the leaves and fruit, was found very valuable; also the application of old iron, blacksmiths' sweepings, etc., to the roots. He expressed strong confidence that these applications would be found a complete remedy for the fire-blight in pear trees, that worst scourge of the Pomologist.

The Delaware Grape.—The vines of this variety must be planted in very rich and naturally very dry or well underdrained soil. They should be planted deep—in dry soils, eight inches; and, if planted in the spring, place upon their roots but two or three inches of soil, and let it remain until mid-summer, when, from time to time, work the soil into the basin until it is entirely filled. This shallow covering gives the sun a chance to warm the soil and quicken the roots to grow and mature before the frost overtakes them; whereas, had the hole been filled at once, the roots would have remained dormant for some weeks, and very likely the vines would have thrown out surface-roots, and weakened the bottom ones. The former are always injured by the heavy frosts of winter and extreme heat of summer.

If planted in the fall, a covering of leaves or straw should be placed on the three inches of soil (to make its depth), and the hole filled with soil, which is to be removed in the spring, just as soon as the heavy frosts are over. The vines should be cut back to three buds, and but one—the lowest—allowed to grow. This must be kept tied to a small stake, and the laterals kept pinched, leaving one additional leaf each time of pinching.—*Rural New Yorker.*

Apples in California.—"Do the particular varieties in cultivation here suit your region?"

So far as the apple is concerned, it is a remarkable fact, that the Northern and Southern apples of the Atlantic slope seem to flourish equally well here.

I have in bearing the Baldwin, Spitzenburg, Rox. Russet, Newtown Pippin, Hubbardston Nonsuch, Canada Reinette, Pomme Gris, Seek-no-further, and many other Northern varieties, side by side with Janet, Pryor Red, Limber Twig, Milam, &c., and all seem to be doing equally well. The apple tree is astonishingly productive here, and has never yet been hurt by frost. Well treated, it grows about one-third faster than in Illinois. The tendency to overbear is attended with some practical difficulties, which we endeavor to remedy by severe cutting back.—*Cor. of Prairie Farmer.*

Horticultural.—We occupied a leisure hour on the grounds of Mr. John Dingwall, of this city, who has given much attention to the small fruits, as well as floral matters. Among the prominent feautures of his grounds is a specimen row of grapes, comprising about seventy leading varieties, some of them not yet fruited. But the younger vines afford as good an opportunity as the older for the comparison of peculiarities in foliage and growth, and the writer was interested particularly in examining the Adirondac, which he had not before seen, for the purpose of detecting any indications its appearance might give on the somewhat mooted question of its native or foreign origin. So far as the leaf is concerned, every mark of the native vine is certainly present, and Mr. D. considered it strange that any doubt of its American origin could have been seriously entertained.

The Delaware vine, as many may be aware from unpleasant experience, is somewhat difficult of propagation. Mr. Dingwall has a plantation of about 2700 vines, started this year, which attracted our notice for their fine appearance. He succeeded in getting this number of vigorous plants out of about 3000 buds cut, in the following way: The cuttings (each containing a single bud) in February last were put into a cracked jar, in alternate layers of an inch or two with about equal quantities of dampened moss, and placed near enough the fires to have a constant heat of perhaps 60°. The first of March, after lying three weeks in the moss, the buds were perceptibly swollen, the wood softened, and the cuttings partially calloused; and they were set out, as usual, in white sand and leaf-mould in a propagating frame over the hot water pipes, at a heat of 75°. The growth made was most satisfactory, and in four weeks the large proportion above mentioned were ready for potting. When potted, they were placed in a hotbed with slight bottom heat until thoroughly established for transplanting into the open air.

Our Minister to Japan, Hon. R. H. Pruyn, of this city, has favored Mr. Dingwall with a number of plants and seeds from that country, some of which are of considerable promise. Several varieties of Maple are new, and, if as hardy as we presume they are, will be decided acquisitions. They came without names, but two of them seem to correspond, we should think, with the *Acer dissectum fol. pinnatifidus rubra* and *fol. pinnatifidus viridibus*, mentioned as shown at the late Horticultural exhibition at Brussels. A third, which we cannot even attempt to identify by that list, is, perhaps, more beautiful than either of the above, having what botanists would probably term a palmately seven-cleft leaf, of very regular form and very regularly and beautifully veined with silver. We trust they may thrive and multiply.—*Country Gentleman.*

Prof. Kirtland.—We are much gratified to learn that Prof. J. P. Kirtland has been appointed to the American Academy of Science, in the place of the late Benjamin Silliman. Not only distinguished as a horticulturist, Dr. Kirtland has great eminence in science, particularly in the mineralogical department.

Mr. Isaac Page, of Lowell, has an apple tree, which never blossoms, and yet is loaded every year with fruit. Grafts from it blossom. The seeds are frequently partially or wholly exposed to view at the outside of the "blow" end of the fruit, while the centre of the fruit is as compact as that of a turnip.—*Weekly Paper.*

Foreign Intelligence.

History of Cotton—*By Major Trevor Clarke.*

[*Continued from page* 60.]

But the favorite staple of the Manchester men is produced by the New Orleans plant; it has more of an herbaceous or annual habit than the Upland race, comes to maturity in a few months from the seed, rests for a few weeks after the effort of producing its beautiful wool, and either dies if touched by frost, or shoots forth again, bearing a second, and often the best crop. The flower is large and saucer-shaped, of a pale yellow tint, or nearly white, wanting the purple basal spots, with cream-colored anthers, and eliptical pod. I have here a beautiful colored drawing of it, done by my friend and neighbor, Mrs. Hugh Wood, of Badby House, Northamptonshire. Closely allied to this sort, and, indeed, indistinguishable before the pod bursts, is the American Nankin plant.

The Sea Island is, by no means, so conspicuous an object, as far as the pod of the fibre is concerned, though the fibre itself is more costly and showy. Its habit is different from that of the last. The whole plant is more or less glabrous, the branches slenderer, and set on at a more acute angle; the blossom is golden yellow, almost tubular from the convolution of the petals, each of which has a rich brown-purple spot at the base; the pod long-oval, often much acuminated, and rough, with pitted depressions. Like the New Orleans, this comes quickly to maturity, and, like it, is often treated as an annual, though they will both live several years in a winterless climate. The seed is black, clean, and free from nap, except at the extremity or extremities, where there is a little tuft, to which the lock of cotton adheres loosely. It varies with an entire covering of greenish nap, which it is said

to put on, as a gentleman puts on his great coat, when taken up to the hills or into a cooler climate. I have raised plants from both kinds of seed, and find the habit reproduced in the seedlings respectively. It has been said, upon the authority of cotton farmers, that these two races interchange habit, appearance, and quality with each other after cultivation for a generation or two, under opposite conditions respectively.

I should feel very much obliged to any observer of the plant in its own climate, if he could tell me of any authentic instance where the change of appearance of seed was accompanied by a corresponding alteration in the flower—whether, in short, the Sea Island plant has ever put on the widely-expanded, pale, self-colored Hollyhock-like blossom and large smooth-elliptical pod of the New Orleans, or *vice versa*. Every monographer, or even pseudo-monographer, like myself, has a conceded right to a crotchet, and mine is, that there exists, or has existed somewhere among the Aztecs or elsewhere, a typical Gossypium hirsutum distinct from the smooth barbadense.

Here is Mr. Wanklyn's superb "Vine Cotton," the seeds of which were kindly presented by him to our Society. The Vice-Secretary sent me three, one of which grew into the plant before you. There must have been some misconception in the description given to Mr. Wanklyn as to its habit of rambling like a vine. The plant is simply a gigantic form of New Orleans, differing only from the normal sort in a general exaltation of development in all its parts. The staple, although injured by the syringe, in the small propagating house here at Kensington, was pronounced by Dr. Forbes Watson to be of very high quality.—Away now westwards across the sultry continent: we have had enough of the Bourbons, like our neighbors.

Brazil and Peru boast of the most curious and distinct cotton tree known. A noble, great fellow he is; too much so for me. My hothouse is fourteen feet high, and in another week he would have broken his neck against the luffer boards! The seeds in the species are agglomerated together into one kidney-shaped mass, to which the cotton adheres so slightly, that it is easily separable by the hand or machine. Some of you may remember to have seen a curious looking specimen, enshrined in a glass case here at Kensington, and labelled "native African." Of this my friend, Mr. Murray, surrendered me a seed or two, and here is the result. It produces, I believe, the Pernambuco staple, or Pernams of the trade. The flower has not yet appeared, nor do I know what it will be like, but I think I can anticipate the bright yellow tube and purple spots of the Sea Island. And here, again, crops out my crotchet. In two separate pods, of the Sea Island I found seeds adhering to each other by twos; they are, very like those of acuminatum, our present subject, and so is the whole plant, except in stature.

I have another plant here, very nearly resembling this in habit, size, and other particulars. It is the Peruvian Cotton of Mr. Clements Markham, well known on account of his services in the establishment of the Quinine plant in India. He has succeeded in introducing this fine Cotton also, and the Indian grown produce has been pronounced most satisfactory. The seeds, however, are free, and not massed, as in the Kidney Cotton.

Away again, Eastward ho! and we are in India, with the any thing but gentle Hindoo, and his despised Surat Cotton.

What a different plant it is, with its deeply cut five-fingered leaf, and dull-tinted foliage, sometimes a short and shrubby bush, sometimes tall and slender as a fairy fishing-rod. The flower is very handsome—purple and gold—like that of the Sea Island aristocrat, but the Cotton—the Cotton—is nowhere. It is usually short, harsh, and only useful in Manchester, when mixed with the medium-stapled sorts from America. Some varieties, however, have the silky quality. The fibre of these is also so extremely fine, that the native women, by their wonderful hereditary fine sense of touch, have been, and are still able, to spin those gossamer threads and weave those "webs of woven air" which have been the admiration of all times, and have been even sung in soft Sanscrit by the dusky poets of the land.

[*To be continued.*]

Choice Pears in England.—I see that the Rev. S. R. Hole has recommended a Pear. I will venture to recommend a first-rate one, Beurré Superfin. I tested it by my Marie Louise, which is also a first-rate Pear, but not quite so good as Buerré Superfin. I tasted, also, at the same time, Marie Louise d'Accle. It is delicious, very handsome, and of a beautiful color, golden russet. In July I tasted Doyenné d'Eté, a good cropper, and nice for an early Pear. Beurré Mauxion and Comte de Lamy are good croppers, and very good.

Doyenne d'Alençon is a fine Pear; Duchesse d'Angoulême is very fine; three pears, not yet ripe, weighed 25 ounces. Beurré Beaumont bore fourteen handsome pears, and is the healthiest-looking tree of them all. Beuerré Diel is very fine.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA

The Annual Meeting was held at Lebanon. The weather, in a travelling point of view, was execrable: many of the Railroads being snowed up. Many members who had expected to be present could not get there at all, and many others arrived only on the last day. The attendance was not, therefore, as full as usual, but was yet very fair.

The President, Rev. James Colder, of Harrisburg, in the chair Many new members were elected, and Charles Downing, of Newburgh, N. Y., J. J. Thomas, of Union Springs, N. Y., and John A. Warder, of Cincinnati, who have taken great interest in furthering some of the objects of the society, were elected Honorary members.

Mr. W. H. Holstein presented for distribution grafts of the Carver Apple, a very early and desirable variety, originating near Norristown. This is not the Carver apple described by Mr. Lukens Pierce in the December number of the third volume of the *Monthly*.

In the absence of the principal officers by the snow on the first day, the society held an informal discussion on the winter preservation of Grapes.

Mr. Bombaugh, of Harrisburg, related the successful practice of a neighbor, who buried his grapes, layer by layer, with green leaves in boxes, in the open ground, and which opened in fine order in spring. His attempt at repeating the experiment had not been as successful as could be desired.

Mr. Myers, of Adams Co., kept Isabella grapes in sawdust, in boxes, kept just above freezing,—kept very well.

Mr. Merceron, of Catawissa, had just seen Mr. Nices' great fruit house at Cleveland, Ohio. The whole affair was a great success. He had tasted Catawba grapes as good as if just taken in first-rate condition from the vines. The building was 50 or 60 feet long,—the walls hollow, lined with sawdust and shavings. The temperature was kept at about 33½°. Bittern,—the refuse matter of the salt works,—was used as an absorbent. The top of the fruit vault was covered with ice, about 6 feet thick, which was formed by sprinkling water with a hose and rose, over the mass during freezing weather. The building is of iron, and cost $12,000. There were about ten tons of grapes alone in the house, bought at 10 cents per pound, but which were now selling at 40.

[At page 186, volume for 1863, we first gave an account of Mr. Nice's plan, which it is gratifying to find now in such successful operation.]

The President had found grapes preserve tolerably in cork-dust, but not so good as he would like them.

Mr. Gray, of Harrisburg, had had fair success by packing grapes in alternate layers with cotton in earthern jars, and putting them in a cellar.

Mr. Merceron has tolerable success by using unprinted printing paper between the layers.

Mr. Grider, of Bethlehem, had preserved grapes by various methods, but the flavor was never satisfactory.

Mr. Bombaugh preserved Easter Beurre Pears one year in a box with river sand perfectly dry; in February following they were magnificent. He had never succeeded that way since, although every step of the process was apparently the same.

What are the conditions of successful Grape culture?

Mr. Grider thought selections of hardy varieties very important. Clinton, Franklin, and Taylor's Bullit, he had most success with.

Mr. Burkholder, of Adams Co., thought a locality free from fogs and heavy dews was of great importance; disapproved of close and heavy pruning as the rule, yet he had seen exceptions where vines closely pruned, on the European German plan, had done very well. His vineyard was very successful, faced south, soil rather loose, rows 8 feet apart, vines from 5 to 10 feet from each other. He averaged 27 pounds each from 17 vines the first year of their bearing: did not let the fruit hang the first year they might bear. Pruned in the autumn, and let the vines scatter over the ground until late in spring. Thought it might be best economy to prune long, as being best conducive to health, vigor, and large crops. He knew of one Catawba vine that bore 300 pounds of fruit. Heavy manuring injured his vines, but approved of keeping the soil stirred. His vineyard was sheltered by woods from winds; was subsoiled at the start. His trellis was of the wire style. His rule was, where Peaches do well, so will the Grape also. Does not like surface roots to grape-vines. Cuts down at pruning to from 4 to 8 eyes.

Mr. Small had not great success with the spur system of pruning.

Mr. Gray had found the Grape succeed very well about Harrisburg. Taylor's Bullit bore best when old.

Mr. Samuel Miller said it was a fine white wine wine grape. It disliked hard pruning.

Mr. Harshbarger's vineyard was a great success. He had not as yet applied any manure.

Dr. John A. Warder was invited to give an account of Cincinnati vineyards. He said five by six feet was thought to be the best distance for

planting. Trellises were seldom used. Tied simply to stakes, so as to allow the horse cultivator to work both ways. The Catawba is still the principal variety grown.

Mr. Merceron opposed much summer pruning.

Mr. A. W. Harrison, of Philadelphia, agreed with Mr. Merceron.

Dr. Warder disagreed with both. Would summer-*pinch*, if not summer-prune, extensively.—Would pinch out the terminals of all strong canes; it strengthened the weaker ones, and made more foliage than otherwise would be. Very little manure had been used in Western vineyards. Had seen some where hog manure had been extensively used, and the product was large, and quality of wine good. The European system of management was still most in vogue, except, instead of steep hill-sides, the taste for lower lands was now more prevalent.

The Five Most Profitable Apples in Eastern Pennsylvania.

Fallawater, Smith's Cider, Swaar, York Stripe and York Imperial, Keswick Codlin, Baldwin, Talman's Sweeting, all had powerful speeches made in their favor. It was decided to settle it by a vote. Fallawater had most votes, Baldwin next, then Smith's Cider, and York Imperial and Red Astrachan had a tie vote next. Scattering votes were given for 24 other varieties.

Mr. Concklin, of Cumberland County, introduced a new sweet apple of merit, which the Society named *Dulcinea del Tobosa*.

Mr. Hoover exhibited scions of Clapp's Favorite Pear for distribution.

Best Three Summer, Three Fall, and Three Winter Pears.

A vote was taken. The best Summer were:—Doyenne d'Ete, Manning's Elizabeth, Beurre Giffard. Three Fall:—Bartlett, Seekel, Belle Lucratif. Three Winter:—Lawrence, Winter Nelis, Vicar and Columbia next by a tie vote.

Dr. Warder, as a native born of Eastern Pennsylvania, asked for the favorite of his early boyhood—the Early Catharine. Many members replied, that it was not of first quality, and unreliable.

The Cherry: its Cultivation and General Management.

Josiah Hoopes, of Chester County, in a selection of varieties for market, would take the True Kentish, Late Kentish, and Large English Morello. For the table: Governor Wood, and some others of Kirtland's Seedlings, Early Purple Guigne, Elton. Napoleon, and Yellow Spanish were splendid varieties when the season was not too wet. The best cultivation for the Cherry was *no cultivation*. Grass-sod and no manure suited them best.

Mr. Mumma, of Harrisburg, had a plantation twenty years of age. Black Tartarian does best, bears abundantly and regularly. Triomphe of Cumberland very fine, Black Eagle very satisfactory. The Florence was a very profitable variety. Elton also fine, but not so certain as the others. Prefers growing his trees in sod.

Dr. Warder thought well of Kirtland's Seedling's. Virginia May was earlier than Early Richmond. A valuable kind, and bears profusely. The Cherry had not done well, of late years, in his section.

Mr. A. W. Harrison said the May Duke must not be overlooked. It produced two distinct crops—earliest quite light colored; latest quite dark, and the best. Cherries should be grown in grass sod. Ploughing about cherries is fatal to them.

Mr. Karmany, of Lebanon County, had noticed the Cherry not to do well near evergreen trees.

Mr. Engle, of Columbia County, had found the Mahaleb stock best for limestone soils.

Mr. Hoopes observed, in some parts of the country they would do well only on Mahaleb stocks.

What are the Best Labels and Systems of Labeling for Trees?

Mr. Bombaugh, of Dauphin County, used tin strips coiled around the branches, with the names scratched on.

Dr. Warder used zinc, with prepared ink, which lasted fifteen years.

Mr. Samuel Miller, of Lebanon County, scratched the name on the bark.

Mr. A. W. Harrison, of Philadelphia Co., also preferred scratching the name on the bark with an awl.

Mr. Otto, of Chester County, used wired zinc labels, with the end of the label twisted once around the branch, to prevent wearing by the wind.

The Best Five Strawberries for Market, and Best Mode of Culture.

Dr. Warder claimed to be the first to produce Strawberries cheaply for the masses. He had sold them at a profit of from three to ten cents per quart. His cheapest way was to plant them in fields simultaneously with corn, the culture of which suffices for the Strawberry. The runners are allowed to grow. After the third season, a spike-harrow is run over the beds or rows. Commenced planting, twenty years ago, with Hovey's Seedling; then Neck Pine and Ross' Phœnix. Tested one thousand seedlings of these. Three only of these were saved in the persons of Longworth's Prolific, McAvoy's Extra Red, and McAvoy's Superior.

A vote on the best five resulted in favor of Albany Seedling, Triomphe de Gand, and Extra Red, Orange (?) and Hovey's Seedling tie votes. Fillmore, New Pine, Jenny Lind, Golden-seeded, each had scattering votes.

Pressing business called us away before the close of the meeting, and we are indebted to the kindness of Josiah Hoopes, of West Chester, for notes of the last day's proceedings.

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

THOMAS MEEHAN, Editor.
W. G. P. BRINCKLOE, Publisher. APRIL, 1865. VOL. VII.---NO. 4.

Hints for April.

FLOWER-GARDEN AND PLEASURE-GROUND.

When the warm sun that brings,
Seed time and harvest, has returned again,
'Tis sweet to visit the still wood, where springs
The first flower of the plain.

Sweet April! many a thought
Is wedded unto thee, as hearts are wed:
Nor shall they fall, till, to its autumn brought,
Life's golden fruit is shed.

Thus the poet sings.

Writing these monthly hints is somewhat dry work, and we may be pardoned for departing a little, at this soul-inspiring season, from the stern logic of dry facts, and seeking to enliven our task with the pleasures of poetic fancy. Our readers will not be satisfied with their "visit to the still wood." The "first flowers of the plain" only puts us in mind of our sweet garden "spring flowers;" and we fear the very first request following the first spring walk through the wild woods, will be for the *Monthly*, "to see what is to be done in April."

Well, there is plenty to be done. The flower-beds must be filled at once with bedding plants, beginning of course with the Verbena. It is not well to set out in full exposure to the sun and wind, plants taken from close frames or greenhouses. Better to set them in sheltered spots for a few days, to harden off somewhat. Most florists, who have regular customers, harden them off before sending; which they do not take the trouble to do when they are simply "sent to market."

In planting for masses, the plants should be set in thickly. All annuals not yet sown should be done at once—the second week in May will be time enough for such tender annuals as Thunbergia, Cypress-vine and Amaranthus—the seeds of the white Cypress-vine should be sown with the crimson, for effect: some very pretty results are often obtained from this plant, trained on fancy trellises. Annuals, or other seeds that have been forwarded in a slight hotbed, or under protection, should be set out whenever a shower affords an opportunity. Where it is desirable to have a mass of flowers in some shady places, the Hydrangea or Hortensia answers admirably, continuing in beauty the whole season. We have seen a bed of the English Ivy in such deep shade with a singularly pleasing effect—there are not many plants that will thrive in such situations, and what will should be prized. As a vine for shady spots, there is nothing superior to the Bignonia capreolata or Golden Trumpet-vine—clothed with brilliant flowers in summer, and maintaining its verdure the year round. Gladioluses are deservedly increasing in favor; a number of new varieties have been lately added to collections—they like a rich loam, rather moist. Where Hyacinths or Tulips were planted in beds in the flower garden in the fall, and are now coming into bloom, bedding-plants may be planted with a dibble or trowel in the spaces between them, so that in a few weeks after the former have done blooming, the latter will come in, maintaining the interest through the whole season. The Tuberose and Tigridia or Tiger-flower, may be treated the same way; moles and ground-mice make sad havoc amongst these roots: a lump of tow dipped in gas tar, and sunk a few inches in the soil in the neighborhood of the roots, will make the marauders shy of coming about. Whenever the ground 'cakes,' after a rain, the ground should be lightened with a hoe and rake; it mixes the air with the surface soil, and as that is a non-conductor, it prevents the soil from losing so much moisture by evaporation, or of becoming so hot and hard, as it otherwise would.

The lawns should be mown as soon as ever it is long enough to bear the scythe, if a continuous 'green carpet' be desired; when suffered to grow

long before the first cutting, a face of brown stumps are left which shows at every successive mowing.

Planting of deciduous trees must now be forwarded rapidly, and, towards the end of the month, commence with the evergreens. We advocate strongly pruning or shortening the extreme points of the branches at transplanting, not only of deciduous trees, but of evergreens also. It is one of the modern 'revolutions,' to be able to speak thus of evergreen trees; the idea would have been laughed at not a half dozen years ago. Of course, there is a way to prune without injuring the symmetry or fine form of the evergreen tree, which a little practice will soon teach the amateur.

Many evergreen shrubs supposed to be difficult of culture, are easily grown in a deep and cool soil. Rhododendrons, Kalmias, etc., do well where these conditions of growth are attended to. The former is supposed to do best in the shade; but it does better in the full sun in a good and proper soil, than in the shade of a dry spot. The fact that they grow among rocks on hillsides, gives rise to the idea that they like a dry soil; but our experience in their native localities proves that the coolest spots on a hot summer's day, is where these plants are found.

This is the best part of the spring, on the whole, to plant evergreens. For immediate effect, they are usually planted much thicker than they are ultimately able to occupy with advantage. In planting, take care to plant those that will finally remain first, and fill in the temporary ones after. It is not uncommon to see trees—a Norway Spruce for instance, that will in a few years possess a diameter of thirty feet—planted perhaps but six or eight feet from the edge of a walk, and no other near to stay when the one so inconveniently close has to be removed.

VEGETABLE GARDEN.

Tomatoes, Egg-plants, Peppers, and similar plants, every gardener tries to get as forward as possible. South of Philadelphia they may be out unprotected by the middle of the month. Here we seldom risk them before May. The same may be said of Sugar Corn, dwarf and Lima Beans, Okra, Squash, Cucumber, and Melons. No 'time' can be set for sowing these, except not to sow till the ground has become warm. A few warm days often makes us "feel like gardening," but unless the ground is warmed, the seeds will be very likely to rot. Here we sow about the first week in May. Onions for seed should be sown in rich soil, but very thickly, so as not to become larger than marbles. Very far North, where they perfect in one year, this advice, of course, is not intended. A crop of Carrots should be sown the end of April. In moist seasons the earlier crops are liable to run to seed.

Early York Cabbage sown last month, or kept over the winter, must now be planted out, where there is a demand for summer greens; and to meet this want, another crop of Spinage may yet be sown.

Bean poles may be planted out preparatory to sowing the Lima bean in May. When 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 came into use a few seasons ago, and 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 among 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, have already got a good reputation here. 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 Windham has been introduced. Trant's Evergreen Pea was spoken highly of by a correspondent in the January number, and if offered for sale by our principal seedsmen, judging by the enquiry we have had for it, it would be found to have a ready sale.

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.

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 Broccoli, and Autumn Cauliflower are desirable, now is the time to sow. They require the same treatment as the general Cabbage crop.

HOT AND GREENHOUSE.

The out-door gardening absorbs the attention just now of almost every one, that the greenhouse is apt to be neglected. Aphids may be troublesome: light doses of Tobacco, two or three successive evenings, will have a good effect on them. Air must be carefully attended to. If the house be kept very warm and close, and then be suddenly allowed to get very dry, by giving air, mildew is very liable to follow. When we commence to give air freely on hot days, the syringe should be kept going pretty freely also.

Dahlias—one of the most popular of fall-blooming flowers—should now be put into pots, all the roots being shortened to admit of its being more readily done. As soon as they sprout, they should be taken off from the old stock, a piece of root being retained with each shoot,—by the second week in May, the time to plant out Dahlias, they will be ready. Calceolarias and Cinerarias, of all house plants, hate a dry atmosphere, and on this account it is difficult to keep them over the summer. If there be any sunk pits at hand, such as are employed for wintering plants, no better place could be found for their summer quarters. The same remarks apply to the Pansy and Daisy.

FRUIT GARDEN.

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 previous volumes, that will well repay a careful reperusal, for the purpose alone of refurnishing ones ideas in that line.

In the other departments of gardening, the hints given last month are still, in the main applicable; and, as it is only our design in these hints to suggest items that are likely to be forgotten, or in which improvements are from time to time being made, there is nothing further to offer.

Communications.

NOTES ON FRUITS.

BY E. MANNING, HARRISBURG, OHIO.

In looking over the proceedings of the National Pomological Society, held at Rochester, in September last, I were much interested in some things and disappointed in others. In the discussion on Apples, why was such excellent varieties as Primate, Garretson's Early, Benoni, Carolina June, Blinkbonny, Fourth of July, Red Astrachan, Porter, Early Harvest, Genesee Chief, Chenango Strawberry, Am. Summer Pearmain, Dyer, Lowell, Maiden's Blush, overlooked? All these are at this place very desirable varieties, either for great excellence, productiveness or profit. They comprise early summer, late summer, and early fall sorts.

Among the long keepers, why were such as the following varieties entirely omitted: White Pippin, Smith's Cider, Liberty, Belmont, Fallawater, Norton's Melon, Ladies' Sweeting, Trader's Fancy, Jonathan? What have all these varieties done? all so fine in central Ohio, and I presume in most other places, when such worthless stuff as Westfield Seek-no-further can find advocates: which has little flavor, except an insipid sweet, shrivels badly, and does not keep.

On Pears, Mr. Downing said Queen of August and Hosenshenk were the same. In all due respect for the opinion of Mr. Downing, he is certainly mistaken; he must have received one or the other variety under the wrong name. The Hosenshenk is of only medium size and quality, ripening here about the time of the Early Harvest Apple; tree of strong, upright growth; does not bear young. The Queen of August, or Moore's Pound, according to Prince & Co.'s catalogue, and in Hovey & Co.'s, Moores, is a very large fine Pear,—the very best of its season,—ripening from the middle of August till the first week in September; tree of rather spreading habit, of thrifty growth, and slender shoots; an early bearer. Both of these varie-

ties are distinct from any other varieties cultivated here.

Why was no mention made of such as Onondaga? so large, so productive, of strong and thrifty growth; an early and sure bearer, not of the best quality but good, and probably the most profitable variety to cultivate for market. Beurre Bachelier, so large and fine, a great bearer; Beurre d'Anjou, Paradise d'Automne, Beurre Bosc. Why did not Mr. Hovey mention such varieties as American Dana, Shawmut Dana, Admirable Dana, Augustus Dana, all extravagantly recommended in his catalogue? And last, but not least, Clapp's Favorite, which he sells from $3 to $5 per tree?

Surely nurserymen ought not to be afraid of the very pets which they don't know how to sufficiently laud in their catalogues; nor should Drs. be afraid of their own cure-all.

Why did not Messrs. Ellwanger & Barry make any mention of the Edmonds Pear? they charged $3 for one tree only last fall, and I think from the price charged for them the variety should have had an honorable notice, at least as a variety of great promise.

The Vicar of Winkfield Pear must surely be a "strange kind of an animal," when Mr. Downing and others never saw one fit to eat; when Field and others would eat no others, when they can get them? The Vicar shows no such partiality with me; not of the best best quality, but if well grown and ripe, always good as a dessert Pear.

In Grapes, no mention even was made of the Clinton, which is surely entitled to an honorable notice: for great productiveness, hardiness, and freedom from disease; and with me last season was a better grape than either the Diana, Catawba, Isabella or Harttord Prolific, not so sweet and cloying, but more brisk and entirely free from that leathery toughness which distinguishes the others.

I do not by any means condemn any honorable notice of new varieties, and their introduction; but I would ask if it is policy to run wild, as is frequently the case, after new comers, almost entirely untried, with the exception of a few cases, and that not long enough to establish their reputation; such a policy may be very remunerative to those who have got their new seedlings for sale in large quantities, at great prices, to show them off in all directions, just as inventors of patent medicines do their nostrums. But, alas! it too often happens that we are swindled out of our money, and after awaiting returns, we too frequently realize but the "apples of the Dead sea."

In conclusion, Mr. Editor, I think it but justice to the cause of Pomology, to try one plant of new varieties, so that we can test it in our own soil and climate; then we can "prove all things, and hold fast to that which is good."

[The rule at Pomological meetings seems to be for some member to ask for information respecting any variety they wish to have discussed. That no mention was made of those named by our correspondent, arose from no one being present to ask about them. We fear that too free an introduction by nurserymen of varieties that are not well known for discussion, would lay them open to the charge of 'axe grinding,' and interfere with the usefulness of the Pomological society. They are of course interested in the sale of old varieties, but when many parties have an opportunity to test a variety, it is a legitimate subject for discussion. There would be, we think, a manifest impropriety in Mr. Barry or Mr. Hovey introducing the Edmonds or Dana Pears, for discussion, when few but themselves could know much about them. In their catalogues, or in legitimate advertising fields, they are on their own ground, where they have the right to say what they please, and the public are themselves to blame if they are 'swindled,' by buying a new fruit before they are satisfied of the intelligence of the man who offers it.—Ed.]

NEW ROSES,

BY JOHN SAUL, WASHINGTON, D. C.

Noticing in the Janury number a description of a few new Roses, I give you my experience with some, with a few other fine novelties:

President Lincoln, H. P., 1863, is described as a curious mixture of lake and lilac crimson. With me, I should describe it as a scarlety crimson, passing into lake; it is difficult, however, to get two persons to describe the color of any flower the same. It is a superb Rose, beautifully shaped like its parent, Lord Raglan, and in growth equally vigorous.

Louise Darzans, H. P., 1862—This I have grown two seasons, and find it a really excellent white Rose, of rather dwarf habit, and a very free bloomer.

Madame A. de Rougemont, H. P., 1863—White shaded rose, of very fine shape; a free autumnal bloomer, distinct and good.

Madame Keeman, H. P., 1863—Pale flesh changing to white, large cupped and exceedingly perfect, of moderate growth; a very first rate Rose.

Sœur des Anges, H. P., 1863—Delicate rosy flesh, changing to pure white, very large and double, one of the most luxuriant growers; distinct and fine.

Jeane Goujon, H. P., 1864—Light crimson, large and very double, beautifully shaped, and exceedingly vigorous in growth.

Lady Emily Peel, H. P., 1863—White, occasionally edged with carmine; of the Noisette character, blooming in clusters; as an autumnal bloomer it is unrivalled: my plants the past fall were perfect sheets of bloom; a very desirable rose.

Alfred de Roguement, H. P., 1863—Deep velvety purplish crimson, intensely dark of fine form; a beautiful rose.

Baron de Rothschild, H. P., 1863—Brilliant scarlet crimson, very large, double, and of exquisite shape; a good grower and free bloomer; one of the finest new roses.

Deuil du Prince Albert, H. P., 1863—Very dark velvety crimson, almost black, large, full and very distinct; it looks like a seedling from 'Cardinal Patrizzi;' the finest *very dark new* rose.

L'Eclatante, H. P., 1863—Bright vivid dazzling crimson, exceedingly rich and velvety; petals large and of great substance; a good grower, and profuse bloomer; beautiful.

Le Rhone, H. P., 1863—Brilliant scarlet, color very vivid large and double; in color surpasses all other roses; one of the best new roses.

Lord Clyde, H. P., 1863—Crimson shaded with purple, large and very double; exceedingly vigorous in growth. Raised by Paul & Sons; an exceedingly fine rose.

Lord Macauley, H. P., 1863—Brilliant velvety crimson, large, full, and of beautiful shape; a very superb new rose.

Madam William Paul, H. P., 1863—Very deep crimson, rich and velvety, large, full and finely cupped; a fine grower and bloomer; a splendid new rose.

Murillo, H. P., 1863—Deep carmine, shaded with purple, exceedingly rich and velvety. This looks like a cross with some of the deep-colored Bourbons; a very desirable rose.

Peter Lawson, H. P., 1863—Deep crimson, exceedingly rich and velvety, large, full and finely shaped; a profuse bloomer.

Vanquier Goliath, H. P., 1863—Brilliant crimson scarlet, very large and double; beautifully imbricated form; a truly superb new rose.

William Paul, H. P., 1863—Dark crimson, exceedingly rich and velvety, large, full and beautifully cupped; an abundant bloomer; a first-class new rose.

Louis Margottin, Bourbon, 1863—Beautiful delicate satin rose, perfect form; a seedling from the old favorite 'Louise Odier;' beautiful.

I have already described in your pages the new Roses of 1862; and though all sent out that season were really fine, some are so superlatively so, that I cannot refrain from again trespassing on your pages with a few remarks on a few after a second year's blooming:

Alphonse Damaizin, H. P., 1862, is a very rich deep crimson, very dark and velvety; a good grower and profuse bloomer; excellent.

Charles Lefebvre, H. P., 1862—At the great Rose Show in London (England) the past summer, clusters of this variety, shown by an eminent Rose-grower, were pronounced by judges the finest of all the Roses shown. With me it proves equally beautiful; color dazzling crimson scarlet, most brilliant. Perhaps this is the finest of all the new Roses.

Francois Lacharme, H. P., 1862—Bright carmine, beautifully formed, globular, large, and free blooming; extra fine.

General Washington, H. P., 1862—This variety is now becoming well known, and deservedly; flowers are large, double, brilliant rosy crimson, which it gives in great profusion in the fall.

John Hopper, H. P., 1862, proves an excellent Rose, growth very vigorous; color, rose, with rosy crimson centre, exquisitely formed and a free bloomer; very fine.

Maurice Bernardin, H. P., 1862—Brilliant vermilion, large and double; in every respect first-rate.

Monte Christo, H. P., 1862—Blackish purple, painted or flushed with scarlet; a vigorous grower and profuse bloomer; one of the most beautiful; the best.

Oliver Delhomme, H. P., 1862, is one of the most brilliant of roses; color dazzling scarlet; flowers large and double; a superb rose.

Prince Camille de Rohan, H. P., 1862—Intensely dark velvety crimson, nearly black; a very remarkable rose; distinct and fine.

Vulcain—A specimen plant of this in my grounds the past summer, forcibly reminded me of our old favorite, the 'Tuscany;' color purplish violet, shaded with black, very dark and distinct; beautiful.

Among the newer Tea Roses the following are good:

Belle Chartronnaise—Bright red, passing to velvety crimson, and shaded with puce.

Comtesse Duwaroff—Rose color, tinted with pink; finely shaped.

La Bonte d' Or—Deep golden yellow; very large and very double.

EVERGREENS FROM SEED.

BY J. M.

The raising of Evergreens from seed, here in America, has got to be quite an extensive business of late. Previous to the breaking out of our great Rebellion, the greater part of our youg evergreens were imported from Europe, excepting such as we could easily root from cuttings. The experience of the past four years has shown us that they can be raised here, equally as well as by the Europeans. Before the cost of importing was so great, we were content to depend on the foreign supply; but necessity has forced us to the raising them ourselves.

At the present time, numbers are engaged in all the Northern States in raising them from seed, and a great many may be found among the settlers in our Western States, where their enterprise has induced them to cast their lot on the distant Prairie, and causes them also to labor to raise trees to adorn it. Our nurserymen, also, are mostly raising enough from seed to supply their retail trade; but have not yet, I think, got fairly in the way of raising them, to warrant the outlay of trying to furnish them in sufficient quantities for the wholesale trade. Enough of them, however, are trying to warrant the belief that we shall henceforth be independent of Europe for our supply.

The supposed difficulty in raising them, was thought to be the drying out of the soil in summer; but this is now obviated by early sowing, which allows of the roots penetrating to the cool subsoil before the hot weather sets in; they will, however, do very well sown in July, or any of the summer months, if sown in a cool moist place.

The mode I have seen practiced for early sowing, was to have a row of frames, with sash, and well banked up around, to throw of the snow and rain; the soil inside raked, and the seed sown in drills, two inches apart, which will admit of their being weeded —which cannot be easily done when they are sown broadcast. The frame and sash are used more for protection ftom birds, cats, chickens, etc., during germination, than from any actual need for them, although, in case of heavy rains they are useful.

As soon as the seedlings have made a few leaves, the sash are left off altogether. A great advantage of the sash is, it enables one to thaw out the soil in the first place, thus getting the seeds sown several weeks earlier than could be done without them.

For sowing in large quantities, where frames would be thought inconvenient, a long narrow border, with a slight slope northward, or the north side of a hedge, to break the sun's rays, would be the most suitable place for them,—sowing the seed as early as possible. They would be strong enough to stand out the winter if covered with some small litter and boughs. If the dry season should set in before the plants have made much root, they should receive a thorough watering in the evening, with the soil stirred up around them the next morning. Some kinds, among them the Taxus and Pinus cembra, and other kinds, do not always grow the first year; they should be sown in a place where they can remain two years without being disturbed. They are usually allowed two years in the seed-beds before planting out.

I last March saw a large quantity of seeds sown in frames, in the way described; and I believe, with few exceptions, the whole of them germinated. Some Norway Spruce were afterwards lost in the hot season, from excessive dryness: the ground, I think, had too much slope, causing the rain to run off easily. Some Austrian and Scotch Pines, sown two years ago, are perfect models, and will be planted out in the nursery rows this spring, 6 inches between each plant, and 2 feet in the rows.

GLIMPSES AT NORTHERN LIGHTS.

BY FRANK FOREST, EASTERN MAINE.

A ramble now and then among neighboring farms and gardens is seldom labor lost. "Cost and compensation" are as faithfully reciprocated here, as in many of our more direct struggles for financial advantage. The few who are so unfortunate as to have defects return from their observations of the live acts of others, with the reflection that there are many who, if not lame in the same particular quarter, limp badly from some other weakness, equally sore and sensitive, and consoling to us.

Keeping a semi-public garden for years,—open for inspection and criticism, except to boys of inquisitive taste in times of ripe fruits,—gradually exhausts the enthusiasm which at first conducts the visitor through the mysteries of rural life; and the visitor himself has much to do with the reception and information he expects to receive, by the mode in which he places his claim for attention before the proprietor: and a dear old uncle, who would make free with the first and finest Aster or Lily in his way, or a single and only cluster of a new grape, of Roger's or Maxatawney, would not be half so dear for the hour to come. We should be half constrained to say to him, "old people like to have things remain as they are."

Our ramble leading us to the most northern limit of fruit growing, we stopped a day or two, early in July, curious to obtain some information of the

hardihood and growth of certain standard fruits. And to do this, we must for a time defer our visit of pleasure to Mount Dessert and the Atlantic House, and start at once to make the acquaintance of an amateur and nurseryman, by reputation a pioneer in this department. He was busily at work among his Plum trees, and, from my reception, I might have suspected he had been one of that class who had been punctured, like his Plums, by some heathen whose absence would not be greatly regretted:

"You can save your crop by cutting the rascal out."

I hesitated about applying the term, so apparently abrupt, to myself; although the first salutation had not given me an opportunity to divulge my title and latitude: the last being an item of some importance in talking of Grapes we call early, or of Pears that are perfectly hardy.

But I shall now learn something new about shooting or entrapping fruit stealers, who have doubtless been investing his premises, thought I, and just the person is he, I am glad to see, notwithstanding my reception etc., for I remembered the premium Victoria Strawberries, having been taken off by a puzzly-headed old hoyden, one Sunday, while I was at church, and his wife was acting sentry from an adjoining prominence. I remembered, too, of his summary arrest, by a workman I then called Faithful, though I have many times since been willing he too should go to church, and I would guard the property. But the strawberries were captured and emptied out of the rusty threadbare habitation, used to crown the apparel of this itinerant harvester, and he was bidden to depart in a way he knew not, and "there wait further orders." And I have fancied my reasons for staying at home on hot Sabbaths have of late been more cogent and plausible; and it was now that I was hoping to become as skillful a detective, with less "cost than compensation."

"It is some work," said my host, "but they are sure to do well!" showing also by the dash of his knife among a group of Washington plums, that it was the crescent made by the Grand Turk, so fatally imbedded in the side of the plums, that he was aiming to cut out.

"This Red Astrachan shows good keeping," I said, "and do they always do as well in this locality?" The tree at which I was looking was the picture of health and good breeding. The Gravensteins standing near did not compare in beauty, and some of the limbs were black.

The pleasure of our host, at this manifest knowledge of his fruits by their habits of growth and forms of the leaves,—a faculty common to all nurserymen and horticulturists who have grown their own seedlings,—so reduced the frigidity of his nature, that we were duly conducted around the square, and the different points of interest were intelligently described. His trees growing with vigor over his plat of five acres, as well as "the word of his testimony," showed the Astrachan to be the most hardy of all apples, if we except the Crabs, and the Baldwins were as distinctly known as the most tender. Those which are sufficiently hardy for middle Penobscot region, were the Tolman Sweet, Duchess of Oldenburg, Benoni, Bellflower, Blake (of Portland) Black Oxford, Early Harvest, Nodhead, Northern Spy, Ribston, and others I do not remember.

Nearly all the best Plums had done well until the winter of 1856–7; and those planted since that time were producing and promising regular crops. The Curculio was the leading, and almost their only enemy. If plums are to be thrust into the laps of our city cousins or country residents, "in hats full or caps full," it must be done after some remedy has been discovered and applied, offensive and defensive, to this invader of all the rights the Plum has ever inherited or acquired. And why may not a way be found to flank, out-general, or destroy the rebel, except our present one of removing all forage on which he could subsist? Enough has already become known, if applied, and reduced to system, to make Plum culture rank equally productive, in favored localities, with the production of other fruits.

What, then, are some of the remedies, and to what extent have they been successful?

At the age of eight or ten, several summers were passed in the town of Lyndon, in northern Vermont, where we had bushels of Plums,—abundance! but they must have been ingrafted, and therefore, doubtless, less liable to attack. My recollection of their quality is not so youthful as to fill me with raptures, as youthful retrospects are apt; but those whose tastes were older, and should therefore have been better educated, pronounced them good, excellent, and perhaps, exquisite,—a word which a Prince might add to his long list of liquid descriptives; but to Grant its use in any other than in the superlative degree, would be to reject its most modest demand of recognition into grape literature. My recollection of the Plums, however, are, that they were large, brindle, and fair to look upon, and there were more than residents and visitors could wish.

Five or six years later, while living near Ports-

mouth, N. H., a tree by the homestead had grown gray in the service, and its head annually turned white, was looked at with no hope, as we behold an apple or pear tree in bloom: for it never produced a plum. It was about that time that a dollar and a half was invested in the purchase of "Downing's Fruits," an investment that paid a hundred fold, and discovery was made into the sudden fall of plums,—so uniform in the month of June. We at once scattered air-slacked lime over every worthy branch and twig, and that ancient tree maintained its venerable whiteness for a month after blossoming, and in autumn ripe Plums, of the most delicious juiciness, was the result. That winter, with due honors and regrets, we parted company with that old tree, having eaten fruit from its branches and been warmed and enlightened by its cheerful fire and its last history;—having one evidence of the ability of lime to prevent the attacks of the curculio.

For several years we noticed large crops of Plums in the garden of the late Hon. I. S. Little, of Portland, which Mr. Duffy, his gardener, stated, was owing to his syringing the trees now and then with a mixture of lime and sulphur water.

It was published some years ago, that trees planted so as to let the branches hang over brooks or ponds of water, would be free from the attacks of this beetle. The experiment is said to have been tried on the Hudson, and though at one time reported to be a failure, I think Dr. Underhill has since affirmed its truth. Its practical application, however, is so exceptional, that it cannot be accepted as a preventive of national value.

Last, but not least. To those who plant Plums in lots of one-half acre and upwards, instead of a dozen trees or less, for a garden, the mode of prevention adopted by Messrs. Ellwanger & Barry, seems the most effective and simple. And unless there is more objection to the practice than I have ever seen stated, it would confer a favor with many large crops, and satisfactory remembrances of your good deeds, by referring often to this 'knock down' mode of treatment. Have an orchard large enough that the labor of one man may be devoted to its care for three hours every morning for six weeks, and the crop will in due time blushingly and abundantly gratify your wishes and efforts for the common good.

But this last recipe ought to be well known to the readers of the *Monthly*. If not, they will expect the Editor,—who has the gift of writing more briefly,—to supply the prescription, for I have digressed too far from my story, and must return from this most northern tour, to the Lumber City of Bangor,—from which point, I may, with your consent, salute you again.

GRAPE-CULTURE AT THE SOUTH-WEST.

BY J. M. JORDAN, ST. LOUIS, MO.

Mr. Editor: I promised to give an account of the transactions of the Missouri State Horticultural Society, which has just closed its Sixth Annual Meeting. I shall endeavor to give the conclusions of *facts demonstrated*, and not follow through the discussion by different members, for many of us said things that were wrong or impracticable. We met to advance ideas, to exchange wrong and poor ones for right and better. Neither do I wish to follow through the proceedings with its repetitions from day to day; but will endeavor to condense from the record the important conclusions on each topic, in the order of Grape, Apple, Pear, Plum, Peach, Cherry, Strawberry, &c.

Grapes was discussed at more than usual length, occupying a large portion of two day's time. We have many excellent vintners, and our State can show many fine well cultivated vineyards. Still many of us have much to learn; and not a few much to unlearn. We have adopted too much the European mode of culture; and as they differ so much from ours, I will give a few of the disputed points.

European vintners tell us to select a steep hillside, east or southern exposure; if steep terrace, plant layers or long cuttings, one year grown; plant twenty inches deep, cut back to two eyes for two years; plant 4 by 5 feet, keep surface roots pruned off. These are a few of the important points on which we differ. Many of our best vintners are from Europe; but they have learned (and many of them by sad experience too) that we have a different soil, climate, and varieties of vines, than they have been accustomed to handle.

Those most successful select a high, well drained piece of land, rolling prairie will do; any aspect is good, for we have sun enough; plow deep, say two feet; drain well; where the ground is not a steep hillside, run the rows in any direction that pleases you; on steep ground run the rows on the level, not up and down the hill. Get *good strong* one year grown plants, if they cost three times the price of poor ones: layers are best, next cuttings one foot long, well rooted, or single eyes from *bearing wood*; but no No. 2 or 3 vine is worth planting. Plant rows 6 by 7, or 7 by 8 is better for many varieties; plant about one foot deep.

Marking off. Use stakes 4 to 6 feet long, drive them 12 to 15 inches into the ground, and, if the work is well done, your stakes will be in rows many different ways; dig your holes slanting from the stake, letting it stand to tie the vine to the first year. Where trellis is to be used, slant the hole from the trellis, so the vine will come up on the opposite side from the hole, so we will not break them when laying them down for winter: as we deem it very essential to prune soon after a few heavy frosts, and lay the vines down and cover with dirt.

One thing often sadly neglected, that is of vital importance to the health of the vineyard and the future success of the plants, is the *tying up* of the vines the first year. One year's neglect will cost two years to correct. Strong vines should grow 6 to 10 feet the first year; and if the laterals are kept pinched back, and the vines tied up, they will ripen their wood and roots, and the next year should yield one-third crop. Keep the ground well stirred on the surface. Do not grow any other crop in the vineyard, one crop on the same piece at a time is enough.

Root Pruning, or cutting off the surface roots, is still practiced by many; and some have ruined their vines entirely by endeavoring to *compel* the roots to run down in the cold clay subsoil.

Varieties most recommended were: for *Wine*—Concord, Norton's Virginia, Clinton, Delaware and Catawba; for market—Concord, Delaware, Hartford Prolific, Rebecca, and a few of the new kinds.

VEGETABLES ALL THE YEAR ROUND.

BY HON. EDW. SATTERTHWAIT, JENKINTOWN, PA.
Read before Pa. Horticultural Society, Nov. 1,'64.

This question, I presume, was not intended to embrace the subject of growing vegetables, as that would more properly come under another head, and would of itself be more than enough for the subject of an essay of this kind. I shall therefore confine myself principally to what I suppose was intended to come under this topic, to wit: the selection of such an assortment and such varieties as would, when properly kept, maintain a supply and variety of vegetables throughout the year; with the best methods of keeping them when grown. To those who are in the habit of procuring their daily supply of vegetables from the well-furnished markets of a city like Philadelphia, it may seem to be a very simple matter to keep up a constant assortment of vegetables all the year round; but it is believed, nevertheless, that too common a deficiency in this respect exists amongst those who possess the facilities for, and who depend upon growing their own supply of vegetables. That there is no necessity for this, and that every one who may possess ground enough for a vegetable garden and the means to cultivate it, may always have a good variety of vegetable throughout the year, I will endeavor to show.

To begin, then, with that universal and most indispensable of all vegetables, the common Potato. Planted in the ordinary way, early in spring, Potatoes will be fit to use by the first of July, and when ripe, in September or October, they may be dug and placed in the cellar, where they will keep, with very little care, till new ones are fit for use: thus they are in season all the year round. Little need be said about keeping Potatoes, as everybody knows they will keep in any dry cellar, that will keep out frost, all the year round with very little trouble. Some little care, however, is necessary. If free from disease when dug in the fall, they should be placed at once in the cellar, as the less they are exposed to the sun and air the better they will be. Those that are kept late in the spring, will have to be moved occasionally and spread out, to prevent them from being injured by sprouting and growing too much, When sufficient cellar room is not had, Potatoes may be kept very well by being buried in the ground, as will be described for turnips, etc. There have been within a few years many new varieties of Potatoes originated, some of which it is believed will prove to be great acquisitions. To the late Rev. Mr. Goodrich of New York, who has devoted a great deal of attention to the subject of seedling Potatoes, we are indebted for several valuable new varieties. Among these I can recommend the Cuzco and the Andes, as very productive and good, and the Garnet Chili, as very good. The variety called the Buckeye I have found to be productive and profitable, of excellent quality and not liable to rot. The Michigan White Sprout is a very valuable early variety. There are perhaps but few varieties quite equal to the Mercer in quality; but this has, for several years, proved so unproductive and so liable to rot, that it can no longer be recommended for general cultivation.

Sweet Potatoes are kept by being placed when perfectly dry, in a room where a fire can be made to keep out frost. They must be handled with great care to prevent bruising, or they will not keep. When carefully housed in this way, they may be kept till new ones are fit for use. Good Sweet Potatoes, however, are rare except in a particularly light soil, and, on that account they cannot be class-

ed among those vegetables than can be relied on for general culture.

Next, perhaps, in importance, are Turnips. Of these there are also many varieties. The only ones which I have found worth growing, are the common White or Purple-top for fall or early winter use, and the Ruta Baga and White French Turnip for use late in the winter and spring. Turnips are sometimes sown early in the spring, and may be had for use by the time the late keeping varieties are done, and may thus be had all the year round. They are, however, of not much account, except when sown as a fall crop. Turnips, like most other esculent roots, are best when grown in very good soil, as they should grow quickly: otherwise they will be tough and woody. The later in the season they can be grown the better they will be. They should be left in the ground as late as possible, so that they are not injured by hard freezing. Turnips will not keep in a cellar like Potatoes, as they immediately commence growing and soon become pithy and good for nothing; and if left long in a heap in the cellar, they will heat and soon become a mass of corruption. They are kept by being buried in the ground, in what are called pits. After trying various methods of pitting Turnips and other roots, we have found the following plan to answer best: A hole is dug to the depth of the surface-soil, or about a foot deep, and about 2½ feet wide, and 7 or 8 feet long; a cart load, 25 bushels, is put in each pit, which should fill the hole and make a heap when snugly piled up about 2 feet high, they are then covered with earth, a line being marked with the spade 2 feet from the heap all round it; the earth for the covering is taken from beyond this line, and is piled up regularly all around 2 feet thick, till the heap is covered all over with that depth of earth: a less thickness of soil than this will not keep out the frosts of severe winter, and sometimes, in extremely cold weather, it will be necessary even then to cover the heaps with corn fodder, manure, or litter of some kind. We have tried covering with straw and other substances before putting on the covering of earth; but this only makes a harbor for mice and other vermin, and does not seem to be of any possible utility. We invariably find them to keep best with no covering but earth. Turnips should not be buried till quite late in the fall, say the middle or last of November, otherwise the warmth of the weather may cause them to be injured by growing in the pit before winter sets in. If it is thought necessary to pull them before that time, they can be left in a heap in some out-building, and covered with the tops till the approach of severe frosts, when they must be buried.

Beets, Carrots and Parsnips, are kept by being buried in the same way as Turnips. Beets should be pitted first, as they are liable to be injured by severe frost; they may be kept good in this way till new ones are use. There are a great many varieties of Beets described in the books; but we have found none better than the Long Blood Beet for the main crop, and the Extra Early Turnip Beet for early planting; these, if planted very early in spring, in a rich warm border, will be fit for use early in June. A few of the Blood Beet may be planted at the same time to succeed these; but the main crop for late keeping should not be planted till about the last of June. Carrots also may be had in the same way all the year round. The Early Horn, planted in a rich warm border, very early, will be fit for use in June, till which time the late grown ones are readily kept. For the late crop we plant the Long Orange; they should not be planted till the first of June. Parsnips that are intended for use in the spring, are better not dug till they are wanted.

Horse-radish and Salsify may also be left in the ground till spring.

Where any of the above-named vegetables are grown in large quaniities for market, they are taken out a whole pit at a time; but where so many are not wanted at once, they may be taken out a part at a time, by opening a hole at one end of the pit, which may be stopped with manure to keep out frost. When only a small quantity of these vegetables are grown, they may all be buried in one pit, in such a manner that a part of each can be taken out at a time.

Cabbage is kept in so many different ways, that it would occupy too much time to attempt to describe them, and I shall only speak of the plan that we have found to answer best. Cabbages that are grown for winter and spring use, are pulled in the forepart or middle of November. They are turned upside down, and left standing in this way for a day or two to wilt: this is to prevent their being injured by crushing and breaking the leaves in handling, which would cause them to rot. They are then sorted, those which are headed up hard being put by themselves, to be used or marketed first (as these, if kept long, would burst and become good for nothing. They are then buried in the following manner: A furrow is first opened with the plow, and a row of cabbage is set in it as close as possible, with the roots in the bottom of the furrow, and the heads inclined in the direction from the sun. Another furrow is then drawn along-side of the first, so as to bury the roots and stems of those so set; and to make the work more perfect, a shovel is used to finish it up, so that every stem is completely covered, and nothing but the head is left out of the ground. Another row of Cabbage is then placed in the last made furrow, inclined in the same way, so that the heads will rest against those in the first row; and these are buried up to their heads in the same way with the plow and shovel; then another row of Cabbage is put in in the same way, and so on till the whole are buried. They are then left till severe frost sets in, when a slight covering of corn-fodder is put on just sufficient to shade them from the sun. In this way we find it to keep very well and can readily be taken out any time when wanted; and those that are only half headed in the fall will many of them be quite hard in the spring. Cabbage put up in this way may be taken out when frozen, and if put in a cellar, two or three days to thaw, the frost will come out without injuring it. Those to be kept very late, should be taken out on the approach of warm weather, and stowed away in a cool cellar or an ice-house. They can be kept in this way till new ones can be grown fit for use. These may be had early in June, if planted in a rich warm border. The plants for this purpose must be grown in hotbeds, or the seed may be sown in September and the plants protected through the winter in a cold frame. This is a common way of raising early plants, with market gardeners. The Early York and Winnigstadt are good early sorts, and the Large Drumhead or Flat Dutch for the main crop. The seed for the main crop should be sown about the first of May, and the plants set out the last of June or first of July.

The different and numerous varieties of Beans are among the most important of vegetables, and are in season all the year round. They are the most easily kept of all vegetables, nothing more being required than that they should be kept dry. When once ripe, they are not injured by frost, and are never disturbed by mice or other vermin. They should be put away when perfectly ripe, and dried in a dry room or loft, where they may be kept for years. As they are so easily kept, and also on account of their highly nutritious qualities, they are one of the most valuable of vegetables. There are many excellent varieties of Beans, but the best of all, either for use green or when ripe, is the Lima. These may be planted about the first of May, and should be fit for use the last of July. They may be had green for three or four months, and a sufficient quantity should be left to ripen, to supply the table for the rest of the year, as they are a most acceptable vegetable all the year round.

Peas are also a most useful and palatable vegetable. They may be had in the green state from June till November, and one variety, at least, the Blue Imperial, is an excellent vegetable for the table when ripe. They are used in this state the same as Beans, by being soaked a few hours in warm water before boiling. They are in season all the year round. Peas, however, to be eaten when ripe, must be grown in those parts of the country where the Pea curculio is unknown. The varieties of Peas are innumerable; we plant principally the Buist's Extra Early for the early crop, and the Blue Imperial for the main crop. These will do well without any support, which is a great object where they are grown by the acre. Those who wish a very delicious Pea, and don't care for the trouble of sticking them, may plant the Champion of England or some other fancy sorts. The Marrowfats are also excellent frame Peas.

Onions are a useful vegetable, that may be had for the table all the year round. They should be planted very early in spring, and pulled about midsummer, or when the tops begin to die. They should be well dried in the sun, and put away perfectly dry, in a dry airy loft, and they may be kept till May, by which time the young ones in the green state may be had fit for use.

Sugar Corn and Tomatoes are two of the most delightful of vegetables in their season, which is from July to November; but as there is no way of keeping these vegetables in their fresh state, I shall say no more about them. There are various ways now much in use of keeping these and other vegetables by canning, drying, etc., about which I shall say nothing, because I did not suppose it would be in place here, and because I do not consider these modes of keeping vegetables to be of much account, except for special purposes, to be used where fresh vegetables cannot be obtained, and my object here is to show that it is a very easy matter to have a good variety of fresh vegetables all the year round, without any extraordinary trouble or expense.

Asparagus is one of the most palatable and wholesome of vegetables; and coming as it does at a season of the year when green vegetables are scarce, it is justly considered one of the most valuable of vegetables; it is in season from April to July.

Spinage and Kale are also useful vegetables at this season of the year, when green vegetables are scarce.

Lettuce and Radishes are also prized very highly

by most people at this season of the year. Lettuce is in its highest perfection only when grown under glass. It may be had in this way all the winter and spring.

Rhubarb, too, is a quite acceptable vegetable in the spring. Within a few years, the most wonderful improvement has been made in Rhubarb, and its consumption has increased enormously. The number of magnificent varieties of this plant has now become so large, that I shall not attempt to enumerate them. It is in season from April to July. This, as well as several others of the last named vegetables, also early Beets, Cauliflower, Cucumbers, etc., are successfully grown in hotbeds; in which they may be had in great perfection during most of the winter and spring months: but this mode of growing vegetables is attended with great expense; and as the whole process was particularly described in an essay I had the honor of laying before this society last year, I shall say nothing of it here. I might mention, however, that for early crops of Cabbage, Tomatoes, Egg-plants, Sweet Potatoes, Celery, etc., hotbeds for growing the young plants are indispensable; though it is much the most economical, where a large quantity is not wanted, to purchase the plants of those who make business of growing them. Growing plants in hotbeds can only be done to advantage where it is practiced on a large scale, for they require constant attention, sometimes during every hour of the day; and where a business is not made of it, they are almost sure to be neglected sometimes, and the whole crop spoiled.

Celery is a vegetable which is a universal favorite; but unfortunately it is a little difficult to grow in perfection, and much more difficult to keep. To grow fine, white, solid and crisp Celery, and have it in that state till spring, requires about the highest degree of skill and knowledge of his art, of any thing which comes within the province of the vegetable gardener. There are various ways of putting up Celery to keep through the winter. We have found none to answer so well as the following: A high and dry spot of ground is selected, in this a trench is dug, from a foot to a foot and a half deep. This should be dug with a narrow spade, so as to be not over six inches wide. The Celery for late keeping should not be much blanched when put up, and should be left as late as possible, so that it does not get injured by very severe frosts. It is dug on a dry day, the soil mostly knocked from the roots; it is then removed in carts to the trench, in which it is carefully packed, roots downwards, and 6 or 8 inches of the tops above ground, the earth is then closed up to it a little, so as to turn away the water as much as possible, but still leaving 2 or 3 inches of the tops uncovered. It should be left in this way, without any covering, except a very slight one of clean straw occasionally in frosty weather, until very severe weather is apprehended, when it should be earthed up more, so as to leave a bank on each side as high as the top of the Celery, and sloping gradually from it, so as to shed off the water; a covering of dry leaves is then put on, which are kept in their place by a coat of rye straw or corn fodder placed on each side, so as to form a sort of roof to conduct away the water. This covering should be sufficient to keep out most of the frost, but should not be too heavy, as a little frost will not do as much injury as too close covering. The great secret appears to be to exclude moisture and frost as much as possible, and at the same time to avoid injury from heating, or destroying the vitality of the plant by suffocation. Celery put up in this way quite green, may be kept till spring, and will come out entirely blanched. It is in season from October to April.

Though not through the list of vegetables in common cultivation, for fear of becoming tedious I will stop here. Before leaving the subject, however, I must go back and recapitulate a little, to see if I have not performed the task undertaken. First, let us take the list of vegetables which are in season most of the year: we have first the inevitable white Potato, and when the nature of the soil will admit, Sweet Potatoes, also Turnips, Beets, Carrots, Onions, Cabbage, Beans in endless variety, and Peas. Then we have in addition to these, during the spring and early summer months, Lettuce, Asparagus, Rhubarb, Spinage, Kale, green Peas, String Beans and Squashes; then, later in the summer and fall, we have Tomatoes, Sugar Corn, Egg-plants, Okra and Celery; in winter and early spring, Celery, Parsnips, Salsify, Horse-radish and Spinage, making at least a dozen varieties for every month in the year, which I should think sufficient.

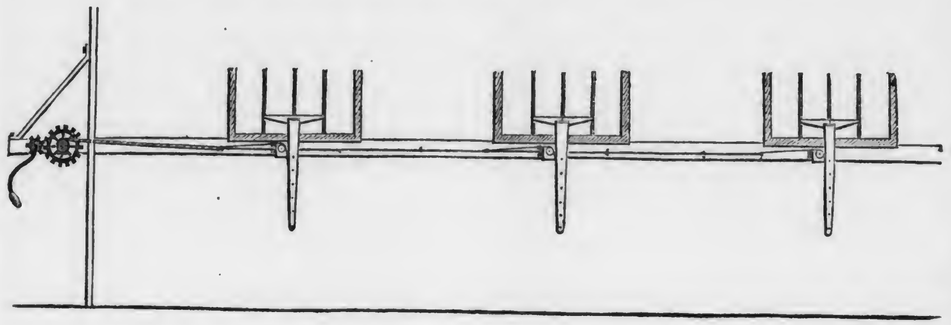
The above hastily concocted remarks have been made in a hap-hazard manner, without regard to any sort of arrangement, and do not pretend to embrace even a complete list of vegetables under common cultivation; my object being merely to endeavor to show, that in the mere ordinary course of operations that properly come under the care of the vegetable gardener, and without any expensive process of forcing, or artificial modes of preserving a good variety of fresh, wholesome and palatable vegetables, can and ought constantly to be produced and at hand all the year round, to supply the tables of all who are fortunate enough to have what ought, I think, to be, and I wish were, in the possession of every family in the land—a Garden.

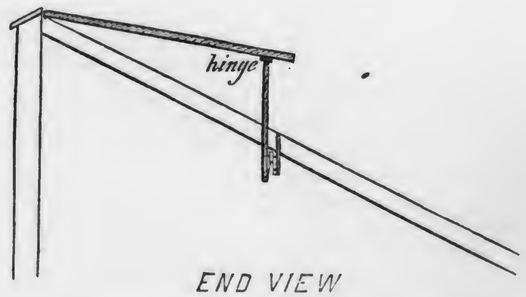
IMPROVED MODE OF RAISING SASH.

BY MR. D. ZIRNGIEBEL, NEEDHAM, MASS.

I believe the following to be a new way of ventilating, or rather raising Greenhouse windows, and a very cheap one too; and when you have about 300 feet of pits to ventilate, a great saving of time.

The idea originated with a carpenter, totally unacquainted with Greenhouse work. Instead of a strong axle running and turning the whole length of the house, the whole is simply a No. 4 iron wire or ⅜ iron with hoops under each window, and one pully to each, with a short piece of common cord: the whole draws back with a common crank. Mr. Moody (the originator of it) furnishes an illustration of the principle.





END VIEW

In the old system a lever was attached to each window, and was altogether a ponderous and costly affair. This is simple, efficient and cheap. One or two minutes time will ventilate all the windows, and by shortening and lengthening the cords, the ventilators may be regulated so as some will open wholly, and others not at all. When five or six windows are raised, it may be done with a crank and cylinder without cog-wheels. The lever which raises the window is made of common white pine, and is fastened to the window with a common hinge.

FAILURE IN PLANTING GARDEN SEED.

BY CHRONICLER.

As a greater quantity and variety of garden seeds are sown in April than in any other month of the year, I will give an account of the many failures I have had in sowing seeds for the past two years; and which I attribute to the compost used as manure: and if my supposition is erroneous, I hope some of the readers of the *Monthly* will give their opinions, that truth may prevail.

My soil is a free working loam, sloping to the south southeast, and well sheltered on the northwest by high grounds and trees. It was manured and dug up roughly in late autumn, and in spring it was shallow dug just before cropping, and broken

fine; drills and holes were made the proper depth and width for the various sizes of seeds, and all sown and planted at the right time. Peas, string and pole Beans, Sweet Corn, Early Potatoes, Beets, Parsnips, Carrots, Salsify, Parsley, Onions, Leeks, and Round-seeded Spinach, all grew well: so did Egg-plants, Tomatoes and Peppers, transplanted with balls of soil at their roots from hotbeds; but Prickley-seeded Spinach, Kale, Scurvey-grass, Corn Salad, Cauliflower, Early York Cabbage and head Lettuce, all sown in September, failed to grow. The failures in spring sowings were with Cabbages (Sugar-loaf, Late Drumhead and Savoy), Broccoli, Okra, Lettuce, Cardoons, Pot Herbs, Celery, Musk Melon, etc.; and of the Flower seeds, Sweet William, China Pink, Columbine, Antirrhinum, Foxglove, Canterbury Bell, Balsam, China Aster, Zinnia, Marigolds, etc.: not a plant came up. I sowed a few seeds of every packet in pots, counting the seeds in each pot, and placed them in a cold frame, with glass sash on, and a plant came up from every seed; when they were large enough I transplanted them in the open ground, and all of them perfected their growth at their appointed seasons. This proved to me that the failures were not the fault of the seeds.

The manure compost is made in this way: First a foot of slaughter-house or barnyard manure, and a foot of fresh tan-bark above it; then a foot of manure and a foot of tan-bark above it, and six inches of soil on top—making the heaps fifty-four inches high, and twenty to twenty-five broad, and fifty to sixty feet long. It lay three or four months before being applied to the land. I never observed any heat or fermentation take place in the heaps, and for that reason I think decomposition went on very slowly, and the ingredients of the materials could not be well incorporated; but the water of rains and snows carried down the *bitter* of the tan-bark among the manure, and so poisoned the whole as to make it detrimental to the germs of some kinds of seeds. It is well known that fresh tan-bark put upon garden walks prevents the growth of weeds, by the *bitter* destroying the germs of their seeds; we need not then be surprised at it destroying the germs of tender seeds of vegetables and flowers.

[A compost like that described by our correspondent, should have salt and lime mixed with it. By this combination, old tan or sawdust mixed with common stable litter, an excellent manure is made.—Ed.]

FAMILIAR BIRDS.

BY J. P. NORRIS.

I.—THE HOUSE-WREN.

It is our intention to present the readers of the *Monthly* with a series of short sketches on such birds as are familiar to the majority of its readers. Before entering on this series, however, it will be well for us to say a few words concerning the nature of the said sketches. It is not our intention to enter into a scientific description of the birds presented, etc., but merely to point out each ones particular usefulness to the Agriculturist.

We have chosen for our first sketch the well-known little House-Wren (*Troglodytes aedon*). With most persons this bird is a great favorite. A few (and let us hope that the number is very small) are of the opinion that he is quarrelsome and ill-natured. We admit that he *sometimes* does drive a harmless little Bluebird out of his habitation, but we regard this merely as his excessive zeal to procure a warm place in which to rear his young. Mr. Wren should have more regard for others, we admit; but do we not constantly see the same pushing, selfish spirit manifested by two-legged beings of a higher order? and if imperfection exists in a race which God made to resemble himself, what better can we expect in an infinitely lower one? Mr. Wren is only following an example set him by his "lord and master."

Too high an estimate cannot be made of the services which the House-Wren performs for the agriculturist, by destroying hordes of caterpillars, and larva of many kinds of insects. During his stay with us, a great portion of his food consists of the above mentioned vermin. He is so active that he scours the neighborhood for some distance in search of his food; and when he finds it, it need expect no mercy; snap! goes his bill, and down goes Mr. Caterpillar!

The House-Wren builds its nest in the most out-of-the-way place imaginable,—any crevice, hole or box suits his purpose equally well. He has been known to build in the pocket of an old coat, and in an old hat suspended against a wall, with a small hole cut in the crown for his egress. Most usually, however, he makes his nest in a box provided for the purpose by the owner of the premises. And here let us give our readers a word of advice: If you have not already provided a Wren box do so at once,—the charming music of the male bird, and the curious habits of the little feathered songster, which will then be observed, will amply repay the trouble, to say nothing of the great diminution of "those nasty caterpillars," as the angels of the fair sex call them. Do not have your carpenter make you an elaborate miniature baby-house, with about fifty small holes, and half as many compartments for the 'accommodation' of the wrens: for we tell you that the Wren is a pugnacious bird, and especially is this the case with the House-Wren,—consequently you will only have *one pair* of Wrens inhabiting your spacious 'house.' But, on the contrary, provide a neat, plain box, about a foot long by six inches wide, and six inches high, having a *small* round hole about an inch and a half in diameter. This will prevent the entrance of other larger birds, and consequently many fierce encounters. The Wren fills this box with thorns and small crooked sticks. These are arranged in such a manner as to leave plenty of room at the back of the box, but only a small passage-way at the entrance. He lines the cavity at the back of the box with whatever feathers he can procure—most commonly those of the domestic fowl. In this soft receptacle he—we beg pardon, *she*—lays from five to seven little eggs of a reddish flesh color, sprinkled with innumerable fine grains of a darker tint of the same color—the grains generally being closer around the large end form a circle. In two weeks, more or less, as many little birds appear as there were eggs, who with out-stretched necks and open bills demand that care and protection (as well as something more substantial in the way of food) that it is the pleasure of the parents to give. And here, although burdened by the cares of a large family, we are obliged to leave our little husband and wife.

THE EGG-PLANT.

BY SWIFT, DELAWARE COUNTY, PA.

One of the most precarious of crops is the Egg-plant. Naturally a tropical plant, it rebels against the least cold. Difficult to germinate,—in fact, it will not germinate at all without a strong bottom-heat. A ticklish plant to transplant at best; and, should a rainy spell succeed the putting out of the plants, ten chances to one if they do not go the way of all flesh. But should one be successful in getting them to grow, it very often happens they refuse to bear fruit; and as it is for their fruiting qualities they are grown, a few remarks on the way to make them fruit well will not be out of place.

When the writer first undertook to grow this fruit, he went to a *celebrated* grower in the neighborhood, to obtain his method of raising it. "In the first place," said my friend, "prepare carefully your ground,—it cannot be too rich. Then dig a hole where you intend putting each plant. and fill in with rich sandy soil. After your plants have been out a week or so, make a ring around each plant, and pour in a good dose of liquid manure, diluted with water; that," said he, "is my way of managing them."

Well, sir, I followed this *celebrated* grower's advice to the letter. And the result? My plants grew beautifully less, till at the end of two month's time, I had nothing left but the dried stems to console myself with. That was 'paying the piper' with a vengeance.

You may well believe it would not have been safe for my *Tutor* to have crossed my path just then. However, I had learnt something of what an American summer was like. I had had some experience in Egg-plant growing too, to my grief. But being one of those men that are not easily put down; and believing in the words of Richelieu, that "for a bright manhood there is no such word as fail," even in little things, I determined to overcome both climate and Egg-plant, or bend them to my will.

Spring being close at hand once more, I took my ground as I found it, and dug it without manure of any kind. About the first of June I put out my plants, and in eight or ten days after, spread a thin coat of old hotbed manure, about an inch thick, over the bed where the plants were growing. In two months from the time of transplanting, the ground was completely covered, so much so, that my *secret* was covered too; and from that bed of fifty plants, covering an area of one hundred and fifty feet, I gathered, before frost set in, five hundred edible fruit, some of the largest measuring three feet in circumference, and when cut open the seeds were scarcely formed inside.

Make a note of that, you gentleman of means. You, who sometimes (thoughtlessly I am sure) tell your gardener that "It don't pay." How can you expect it to pay, when you consume up every thing grown on your grounds, from a radish to a bunch of grapes?

That summer proved to be the driest on record. I heard old men in the neighborhood assert, that it was the driest season they ever remembered. I sent an invitation to my friend to pay me a visit, which he did. Almost the first question he asked was, "How are your Egg-plants doing?" His plants had all failed, although he had constantly watered them. Mine had no water. I explained to him the theory of top-dressing. Showed to him the practical working of it, but all to no purpose. He firmly believes to this day that I made the *magic ring*, and watered those plants. He had no faith in top-dressing, and I am sorry to say there are too many of his belief

The Gardener's Monthly.

PHILADELPHIA, APRIL, 1865.

☞ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box ~ Philadelphia."

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DWARF FRUIT TREES.

All who want to grow fruit easily, and in large quantities, on a very extensive scale, or in a way that is to bring back the largest amount of revenue for the smallest amount of capital invested, will probably plant standard fruit trees. To this there is no objection. But there are thousands who have other views quite as commendable, to whom the dwarf fruit tree is a blessing of an inestimable price.

There is a certain something in Horticulture that fascinates beyound the more belleyish results of what we do. No one can excel us in the gusto with which we smack our lips over a deliciously well ripened fruit; but we are quite sure we would prefer to have but a peck of them, ripened on "our own" tree, than a bushel of the same quality at "lowest market price." All who will not subscribe to this sentiment, will please read no further,—those who can may continue to the end of the chapter, and discourse with us on dwarf trees in general.

We, then, O! selected readers, have not our broad acres, where we can set out our hundreds of large fruit trees; or, if we have, we have other views and purposes in regard to the dispositions of our land. We have but our small city garden; or, living in the country, we have but a small garden ground that it suits us to occupy with fruits, flowers or vegetables. And so we propose to set out nothing in our little plots in the shape of trees but dwarf ones; and we expect to have with them a certain sprinkling of small fruits, and other little notions that we value much.

If we plant standard trees, we can have but two or three trees in the whole place, which will in the end monopolize all the ground, to the exclusion of every thing else; but with dwarf trees we can have the apple, the cherry, the plum, and the pear,—find a corner for a few grape vines, have strawberries, raspberries, gooseberries, and currants,—and grow pretty good asparagus and some flowers, with other nice things good to eat and to see grow.

Our standard loving friends, though they have left off reading this chapter with us, are, we half suspect, listening to what we say; and we think we hear a gruff "Humbug," "All humbug, these dwarfs:" "Suppose a few trees did take the whole ground, I would get more bushels of apples from the three trees in ten years, than you will from your whole lot of dwarfs in twenty." Possibly my friend, but our circle does not measure its happiness by the bushel. That dwarf Louise Bonne pear, eight feet high and four feet across at the base —a perfect cone in form, with every leaf perfect, and every thing just where it is wanted and looks best, with its half bushel of rosy cheeked bells hanging around most artistically and yet most naturally, has held many an hour's profitable conversation with us, that we would not have missed for a whole world of your standard friends. That Red Astrachan apple, though but five year's old, with its half peck of apples the second year of its bearing, has afforded me more pleasure, I know, than the same kind a standard, which farmer D. has in his twenty acre orchard, and which it will be perhaps nearly another five years yet before he gets his peck,—the *summum bonum* of all his hopes; and that dwarf Plum—grafted on the Chickasaw or Wild Canada—well,—I have had some little watching to exercise against curculio and knots, and borers,—but there are the plums, and where are farmer D.'s.

But, not minding grumblers, let us proceed with our trees. In choosing them, whether Apples, Pears, Plums, or Cherries, we take two year old trees, and have none but those which have been grafted close to the ground. We have none but *handsome* trees, for our dwarf garden is as much for beauty and pleasure as for fruit. A two year old should have a nice straight leading or central shoot, and about half a dozen horizonital shoots from near the base, as the foundation of the future tree. If such trees cannot be easily had, get one year old, and cut them down to within six inches or so of where they were budded. Train up one shoot straight for a central by setting a stake there, and when it has grown about a foot or eighteen inches high, pinch out with the finger and thumb the point of this central leader. This will cause the side shoots to push vigorously, and they should be thinned out to about five or six, and a little assistance given them at the start by tying or otherwise, towards insuring their growth in the regular directions you want them. Probably they will push

out all of equal strength: if not, pinch out the strongest in the same manner as the leading shoot was pinched, which will check it a little, and favor the strength of those which inclined to modesty and a weaker growth. Sometimes the leading central shoot, after being pinched back, will not push out side shoots strongly; but making another leading shoot, as vigorous as before, prepare to start ahead. In about three weeks or a little more in this case pinch it off again, and the second time rarely fails to do the thing complete. This will give us the foundation of a pretty tree. Remember pinching a branch when growing, invariably checks its vigor; and as the central leader is always the strongest, stronger than we want it to make handsome dwarf trees, we pinch to weaken it, and strengthen the side shoots,—therefore the side shoots should never be pinched in summer except they be very vigorous, nor then, unless the leading one is pinched out at the same time.

Dwarf trees, managed rightly, want very little winter pruning.

Sometimes our dwarf trees strike a very favorable soil and circumstances, and grow more vigorously than it is desirable dwarf trees should do. Especially is this so of the dwarf Cherry. The best remedy for this is to carefully dig the tree up, and reset it again immediately after. Indeed, whether they grow very vigorously or not, most dwarf trees are improved by a biennial or triennial transplanting. It is not essential to good success; but is one of the ingredients in perfect culture.

Dwarf trees can be set from eight to ten feet apart, and a great number of all sorts set in a half acre lot. They bear fruit in a very few years, and afford much pleasure to the enthusiast in pomological knowledge, by the opportunity they afford of testing and becoming acquainted with many kinds, and learning what varieties are best suited to his place and his taste, and all their little peculiarities. They furnish him with material on which to exercise his pruning and training skill,—they constitute in fact, one of the most perfect schools of Horticulture,—and one who has been through a course of study therein, though but for a quarter of an hour a day for a year, deserves to be elected, without further qualification, a member of the nearest Horticultural Society.

"So far, very good, Mr. Editor," exclaims one of our dwarf tree circle, "but have you not conceded too much to the out-and-out standard tree man, when, at the outset of your auditorium, you granted him standard trees were absolutely more profitable. I will guarantee to make more from my dwarf trees on an acre in twenty years, than he will with his standard trees on the same measurement, and in the same time."

Truly there are successful dwarf men pecuniarily as there are failures of men of the standard persuasion; but it does not suit the particular point that we had in view, to discuss that question just now: and it did no harm to our argument, if, for the sake of argument, we admitted the views of the standard fruit man in that respect correct.

LIME, CEMENTS AND MORTARS.

We took occasion, while noticing Mr. Hooker's Cement Tanks, to refer to the confusion existing in regard to the different forms of limes, mortars and cements. The following note from a friend suggests to us that a chapter on the subject may possess an interest to the great mass of our readers:

"Feeling at a loss to account for the 'why' lime-water is advised in the *Monthly* for making mortar for greenhouse flues, I passed the enquiry to a son, who has been a close student of Chemistry, and who answers:

'I do not see any plausible reason for the use of lime-water in making mortar for greenhouse flues. Lime dissolves in about 250 parts of water, and that small quantity would have scarcely any effect upon coarse mortar. Clay, it is true, will not allow nitrous or ammoniacal gas to escape by it, as it absorbs it all: as, for instance, triturate a piece of mortar from an old stable wall with quicklime, and it sets free the ammonia, etc., very perceptibly. Lime-water absorbs carbonic acid very freely; but the small quantity you would have in lime-water would soon be transferred into Ca. O. CO2.'

If convenient please give a line of explanation in the *Monthly*."

Before entering on the scientific part of the question, we may premise that we know much more of the matter practically than we are able to explain; and from what we can gather from works on hand, men of science are as much behind as we are—a conclusion which the note of our correspondent, who is not only one "who has been a close student of chemistry," but who is also, we believe, a Professor of Chemistry in one of our colleges, tends to confirm; for, if lime-water will make better mortar than common water, which we know practically it does, certainly some 'plausible reason' ought to be able to be given for the fact.

We have for many years been interested in finding a satisfactory theory for the proper draught of furnaces and flues. This has led us to build with

our own hands over a score of furnaces, boilers, etc., and to experiment with mortars made in various ways, and with many materials. One of the first conclusions which we arrived at, that was contrary to the general opinion of regular furnace builders, was, that the sooner a fire is put into the furnace after it is finished, the better is the mortar ever after. We have since been amused at hearing 'bets' made by 'professionals,' looking on at the finish, that the furnace would crack, and burst, if a fire be "put on with that wet mortar,"—always to the discomfiture of the cracked side of the argument. The result is, our theory, that the *quicker mortar can be made to crystallize, the better it is.* So far, this seems to agree with science. Professor Mahan, of West Point, says: "Mortar of common lime will not set in humid situations. They (the mortar, not the situations) set very soon when exposed to the air, or to an atmosphere of carbonic acid gas."—*Civil Engineering*, p. 37: which we take to be very good law, if not very good grammar. We are quite sure it should not 'set' a moment before you want it, and then the sooner it sets the better.

By going from this point to the scientific one, we think we can show that lime-water makes much the best mortar.

Stone lime is a compound of carbonic acid and lime. When we drive out the carbon, in our processes towards mortar making, we soften it,—when after this we afford it an opportunity to re-absorb carbonic acid, what scientifically we call making a 'carbonate;' the quicker the hardening or carbonization the better; and in view of this fact, whatever we may do to prevent carbonization, until we are ready to carbonize it, better still.

The very best lime for mortar is that fresh from the kiln. If it lie exposed a few days, it absorbs carbonic acid from the air; and in proportion to the quantity it absorbs, is it near dead, as mortar makers technically call it. The whole aim and object of good mortar making, is to keep it from setting until it is where you want it, as a crystal of course adheres to the neighboring material only when forming, or during the act of crystallization. If it crystallizes before it is in place, it will not reunite afterwards.

If it be useful to keep the carbonic acid of the air from the lime, until we have made a perfect hydrate of it, it will of course be as useful to keep the carbonic acid in the water from the lime also, for the same reason. There is not much lime taken up by the water, it is true, because there is not much carbonic acid in water. Lime is insoluble in water, as we understand it; and it is only the carbonic acid in the water that acts on the lime,—and we should say it only takes up lime in proportion as it parts with its carbonic acid. The proper rendering of this conclusion then would be, that *lime-water makes the best mortar because it has been purified of its carbonic acid;* and after the lime has been properly hydrated, the quicker it can be permitted to absorb carbonic acid gas the better.

After sketching out these views, in reply to our correspondent's enquiry, we felt somewhat diffident about handing them to the printer, when, on examination, we found no encouragement in any work at our command; although, feeling sure the practice was good, we thought the reasoning ought to be. At this point we referred the matter to our friend Dr. J. S. Houghton, whose special line of study leads him to a better acquaintance with what is known of the matter. He very kindly referred us to a very rare work, now out of print, entitled, "On the Depreciation of Mortar, &c.," by Dr. Brindly Higgins, as quoted by Austin, which seems to confirm our opinion pretty nearly. He says:

"The quantities of *acidulous gas* known to be contained in waters commonly used in making mortar, must greatly debase the lime which is exposed to double the weight of such water." And again, "I have found by reason and experience the advantage of totally expelling the gas, and preventing its return to the lime, *or even to the mortar until ready for use.*"

This explanation will perhaps give us a formula of expression, to which our correspondent will more readily subscribe than to our own. Instead of saying simply, "Lime water makes the best mortar," it would be better more scientifically rendered: *The best mortar is made by hydrating the lime with water entirely free from carbonic acid.*

NEW HALL OF THE PENNSYLVANIA HORTICULTURAL SOCIETY.

It is gratifying to observe the rapid progress of this excellent object towards a successful end. The lot has been decided on, and plans and specifications are in progress. The Committee evidently feel that "the more haste the less speed" is too often a maxim to cover up indolence. Certainly in societies "delays are always dangerous." Feeling "sure they are right," the Committee are progressing wonderfully 'ahead.' That Boston should have first got a Hall, before the place of the cradle of Horticulture, seems to have nettled the pride of the Pennsylvanians; but they expect soon to send to Massachusetts "greeting."

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 SCALE ON APPLE TREES—*Mr. E. Manning, Harrisburg, Ohio*, writes:

"Enclosed I send you a sprig of an Apple-tree limb, infested with some kind of an animacula entirely unknown to me. It presents the same appearance both winter and summer. Cannot discover any motion at any time of year. Tree fuller in body and most parts of limbs than on the twig sent. It has the appearance of a small snail when viewed through a small insect glass. Tree first infested two years ago last summer. It greatly retards the growth of the tree. Out of eight hundred trees, only three, as yet are infested. I fear it will be a serious pest. Can you tell me what it is, and what remedy to apply?"

Not recognizing this as an old acquaintance, we sent it to our entomological friend, Mr. J. Stauffer, of Lancaster, and the following is his reply:

"Yours of the 24th ult., enclosing a sprig covered with a mass of *cocci*, as you correctly term them, from your Ohio correspondent, have been examined under the lense, and add another drawing to my already numerous collection of similar insects.

This Bark-louse belongs to the genus Aspidiotus, but differs in some respects from the *Aspidiotus linearis*, named *conchiformis*, by Gmelin, and the *Diaspis linearis* of Costa.

From a close comparison, I am not prepared to admit that they are the same species which G. Kimball, Esq., reports having been introduced into Wisconsin from Cleveland, Ohio, in 1840, which finally killed all his trees. These were supposed to be a new species, but Dr. Fitch considers it the same as that described by Reaumer, in 1738, who named it *Coccus arboreum linearis*. There is a marked difference in the specimens on the same twig, however, otherwise I would have come to some positive conclusion. These modifications I have observed before, and may prove to be sexual: that is, those having eggs under them, being wider and less elongated; or those not covering eggs have suffered from a minute parasitic Hymenopterous insect, known to infest them,—this may account for the difference in form.

You are well acquainted with the diversity of these pests, which infect almost every variety of plants, from which they derive their specific name.

The best known remedy is anointing the tree with grease or oil.

I have a number of drawings, taken from specimens I found and received from other persons, and may sometime write you out a full account, with illustrations, should you feel disposed to have them engraved.

[The offered notes will be highly appreciated, and we should have pleasure in going to the expense of the illustrations.]

PLANT GROWING.—A Cincinnati correspondent writes:

"An old friend of yours, by the name of Hutchinson, here, is the best plant grower that I have ever seen. He confines himself chiefly to Roses, Verbenas, Heliotropes, Mignonette and Fuchsias, and a few other things; but it would delight you to see such fine healthy plants as he has got. It is worth going miles to see his greenhouse,—and what do you think is his secret? Why he pots in rotten cow-dung, and *nothing* else. There is a secret for you! He gathers it up in the fall, and keeps it in a dry place. Before potting he puts it through a seive; and when potting puts a little of the coarse in the bottom of the pot, (no crock or drainage of any kind), and uses the fine round the sides. Every thing thrives in it, from a Begonia to a Scarlet Geranium. No peat! no loam! no leaf mould! He propagates in sand, and pots in cow-dung! That is his Alpha and Omega."

WINTER IN CANADA—*C. A., Paris, C. W.*, says of the weather:

"The winter in this part of Canada West has been thus far steady cold, the thermometer only once or twice reaching zero, and it has not stood above the freezing point twenty-four hours in the last two months; and we have had two months good sleighing. This morning (Feb. 13th) the thermometer stood 16° below 0 upon the hill-tops, and 20° below 0 in the valleys; this I fear will be death to the Peach blossoms, although they are, perhaps, in the most favorable condition to receive such severe cold."

WINES.—We have received recently several samples of wines from some of our kind readers, as specimens of their own manufactures, and as illustrative of the progress of wine making amongst us. Some from Mr. Thos. Neill, Sandusky, Ohio, made

from the Catawba and Isabella, is a very pure article, and shows conclusively that first-class wine can be made, without sugar, from American grapes.

Removal of Fruit Trees—*J. W., Muscatine, Iowa*, sends the following query:

"Can annual or biennial removal, as recommended in the notice of River's book, referred to, be practiced, compatible with uninterrupted fruitfulness?"

[We think it can. The first removal would not probably be followed by fruit; but every successive removal would be attended with much less check. We have a very good opinion of these occasion removals for dwarf fruit trees.]

Killing Red Spider—A correspondent, *D. C. F.*, writes, that he has tried Mr. McQueen's recipe for killing Red Spider, often during the last thirty years, without any great success.

Books, Catalogues, &c.

The Vegetables of America. By Fearing Burr, jr. Boston: Published by E. Tilton & Co. Philadelphia; From J. B. Lippincott & Co.

One of the main distinctions between Agriculture and Horticulture is, that while the one ministers strictly to mere physical wants, the other deals with matters of taste and social refinement. Agriculture is an absolute necessity to man; Horticulture is one of his richest luxuries. Food and clothing is the aim of the farmer: the gardener would add to it beauty and elegance.

The publishers of this work know how to appreciate this distinction. It is one of the most beautiful books ever issued from the Horticultural press in America,—and as useful as beautiful. The binding, the letter press, and the illustrations with which it is profusely adorned, are up to the latest improvements in their respective arts,—while the full manner in which the "vegetables of America" are described by the author, together make it a volume that will be welcome to every library.

The object accomplished by the author, is the description of all the classes and varieties of vegetables that can be or may be grown in America, with explicit directions for their cultivation and management. The description of varieties is quite an original feature. It is of great importance that one should be able to identify what he is growing with what it ought to be; and with this work in hand, he cannot go wrong.

The Young Gardener's Assistant. By Thos. Bridgeman. New Edition. New York: Wm. Wood & Co. Philadelphia: J.B.Lippincott & Co.

Mr. Bridgeman's book has long been a standard work with the horticultural fraternity, and will be for many years to come. Of the matter of a work already so favorably known, we need not speak; but we may add a word of commendation of the improved appearance of the present edition over any former ones,—to the credit of the New York publishers.

To those who may not already have this valuable book in their libraries, we may say, that it covers the whole ground of flowers, fruits and vegetables in one volume.

The Rural Annual, for 1865. By Jos. Harris, Rochester, N. Y.

From some cause, this is the only one of the "Annuals" which has reached our table this year. It is equal in interest to any of its predecessors, and has in addition a list of a great many of the Nurserymen of the United States,—fuller than any hitherto published, especially of New York State.

Silliman's Journal, *The Atlantic Monthly*, *Harper's Weekly*, and *Scientific American*,—all representative serials in their several departments of literature,—we find duly received, among the many interesting matters on our table.

New and Rare Fruits.

Fondante de Malines Pear (*See Illustration.*—Among the very promising Pears, little known as yet, but evidently 'rising' in public esteem, is the Fondante de Malines.

The prejudice against foreign Pears is gradually wearing away, so many holding their own against the numerous native born rivals; and this one, we think, will be an additional illustration. More extensive trial, however, will be necessary before it can be universally recommended.

It is not a new Pear, having been long in American collections; but for all, we think it may justly come under our head of 'Rare Fruits.'

We are indebted to Mr. F. R. Elliott for the beautiful drawing from which our engraving is taken.

Tree vigorous, productive, fruit, medium, roundish obovate, pale yellow, traced and much covered with red russet and brownish red, occasional spot of vermilion in sun; stem, long; calyx, small; core, large; flesh, white, buttery, sweet, 'very good.' Oct.

[FONDANTE DE MALINES PEAR.]

THE DANA GRAPE.—Francis Dana, who is the most successful of all men in producing new and valuable varieties of fruit, placed on our tables again this year, a seedling grape, which he has named the Dana, which attracted considerable attention. The best pomologist of our Society, after having carefully examined and tested it, said it was the Rose Chasselas,—high praise, certainly. The bunch was of medium size, shouldered, rather compact, with a peculiar red stem, the berries of rather large size, nearly round, red, with a rich heavy bloom, so that when fully ripe, they appear almost black; as free from pulp as the Delaware; not so sweet, but more spirited and vinous, and yet not an acid grape. Ripe the 20th to the 25th of September, and that not under the most favorable circumstances. This fruit was shown again December 24th, in a fine state of preservation, retaining its flavor to a good degree, thus seeming to possess the long-keeping qualities of the Diana. We consider it a promising variety. The same gentleman also exhibited another new seedling, which he calls

NONANTUM.—This is a black grape, bunch rather small size, as it appeared this year, shouldered, berries of good size, oval, similar in shape and appearance to the Isabella; entirely free from pulp, being quite remarkable in this respect; good flavor, promising; some preferred it to the Dana. Time of ripening about the same as the Dana. Some of your Committee had the pleasure of visiting Mr. Dana, and seeing these vines bearing their fruit; and we do not hesitate to say, that the specimens shown this year were grown under unfavorable circumstances, so far as relates to the situation of the vines: they growing thickly among other vines and trees, which leads us to believe that under more favorable circumstances, even better results would be attained; yet the past season having been so favorable to the ripening of the grape, it is hardly wise to give a more decided opinion based upon the product of this single year.—*Transactions of Massachusetts Horticultural Society.*

WALNUT—*Dwarf Prolific.*—A truly dwarf variety of Walnut has long been a desideratum for the fruit garden, both for the sake of obtaining produce without having to wait half a lifetime, as for the numerous advantages that result from the cultivation of small fruitful trees. This variety was raised at Chalons, and is known in France as the *Noyer Fertile.* It bears an averaged-sized nut, and is abundantly productive in a small state; but as the trees are all raised from seed, they differ in habit and relative precocity.—*Revue Horticole.*

NEW APRICOTS IN ENGLAND.—*Canino grosso.*—A variety from Canino, in the Papal States of Italy. Fruit larger than the Royal, well-flavored, melting, and high colored; skin orange and red on the sunny side. The tree is quite hardy and free-growing. Introduced by Mr. Rivers.

Early Moorpark.—Fruit roundish, inclining to oval, with deep suture on one side, extending from the base to the apex. Skin Yellow, mottled and dotted with crimson on the exposed side. Flesh in all respects resembling that of the Moorpark. Ripens three weeks before the Moorpark.

Sardinian (De Sardaigne).—A trifle larger than Red Masculine, but equally as early, and much superior in flavor. Skin is white, with a few crimson spots, and sometimes a flush of red. The fruit has a deep suture on one side. Flesh juicy, with a sprightly sweet flavor.—*Chronicle.*

THE following New Seedling Pears are thus noticed in the "Transactions of the Massachusetts Horticultural Society:"

GENERAL BANKS.—S. A. Shurtleff favored us again with specimens of this new pear, which was of medium size, round, rather long stem, color yellow, with a red cheek, a little gritty at the core, melting juicy, fine-grained, and of fine flavor, promising, and worthy of a further trial.

GENERAL GRANT.—Another from the same. Was tested on the first of October; large size, pyriform, nearly melting, sweet, fine grained, and seems worthy of a further trial.

WHEILDON.—Mr. Whieldon placed on the tables, at the Annual Exhibition, his seedling pear. This pear has never been brought to the notice of the Committee in the regular manner, hence we have had no opportunity to test it properly. During the hurry and bustle of the Exhibition, we cannot form a correct estimate of the qualities of a pear from a single specimen, or even two, shared among the Committee in the exhibition room. We annex a description as found in the last Patent Office Report, with slight alterations:—"Size medium to large; form obtuse, obovate, pyriform, but variable in shape; color dull greenish yellow, with stripes, specks, and marblings of russet; irregular, uneven surface; stem long, largest at the end that joins the tree; cavity acute, furrowed; calyx large, with long segments, half closed; basin furrowed; flesh yellowish white, a little coarse grained, and gritty around the core, tender, breaking, sweet, rather juicy, aromatic; core and capsules small; season last of September and October. Tree spreading, upright, healthy grower, productive."

MOUNT VERNON.—Walker & Co. exhibited their new pear again. It never appeared better, it being of large size and handsome appearance, attracting considerable attention; somewhat russety, with red cheek; stout stem, with a very strong cinnamon flavor; a good pear, but we fear it will not keep well. As it has only been grown in one location, we cannot predict what it would do under different circumstances, but think it will be grown to some extent on account of its distinct and peculiar flavor. It is not a pear of the very highest character as regards quality.

DIMAN.—On the 29th of October, Dr. Shurtleff sent in the Diman, of which we can only say, it is small size, russety, with red cheek, sweet, but lacks character; does not seem to be worthy of a place among the good pears. It was the Committees privilege to visit the garden of Dr. Shurtleff, and examine the thirty-five or forty seedling pears that he had in bearing at that time, which was about the 15th of September, and we confess we were both pleased and surprised to find so many large, fine looking pears raised from seed. There was hardly a very poor one among them all, and some promise well, as we have already observed. Any man should deem himself fortunate to be able to produce *one* new pear out of a thousand seedlings, that shall be found worthy to take a place among the really good and desirable varieties. Dr. Shurtleff has certainly labored diligently and understandingly in this matter, and deserves the highest success. Time will decide the merits of his seedlings, but if some of them do not realize the expectations of their originator, then we shall be disappointed.

ELLIS.—This seedling was shown at the Annual Exhibition, the specimens having been brought from New Bedford, by W. P. Jenny, to whom we acknowledge our obligations. An outline and description of it is given in the *Magazine of Horticulture*, for October, 1864, page 371, a part of which we annex:—"Size large, about four inches long, and two and three-quarters in diameter; form elongated or obtuse, pyriform, contracted near the the middle, swollen on one side, rounding off to the crown, which is small and obtuse at the stem; skin green, little rough, becoming of a dull yellow green when mature; considerably mottled, with russet around the stem and eye, and thickly dotted with large, round, conspicuous russet specks, with occasional green patches in the shade, and a slight bronzy tint in the sun; stem rather long, about one and a half inches in length, pretty stout, and obliquely inserted in a deep contracted cavity, formed by ribbed or knotty projections; eye rather large, open, and but little depressed in a very shallow basin; segments of the calyx short, thick, stiff; flesh yellowish white, little coarse, very juicy and melting, with a brisk, sprightly, vinous flavor; core small; seeds medium size, rounded, plump, sharply pointed, light brown. Ripe October 1st, and does not rot easily." This variety has already been disseminated considerably. It is said to be a seedling from the Seckel, but it does not much resemble the parent. It is a good pear, and will find a place in many collections, though we doubt if it ever will rank high as a market fruit, for its color is not in its favor.

NEW ENGLISH CURRANT—*Prince of Wales* (Varney).—This is the finest black Currant we have met with, the fruit being as far superior to the Black Naples as that variety is over the Old Black; and, with this still greater improvement, it is an immense bearer, and very compact grower. Stock in possession of Messrs. Cutbush, Highgate.—*Gardener's Weekly.*

DOWNING'S EVERBEARING MULBERRY.—The following, from a foreign journal, gives the English estimate of this variety:

"This was raised from the seed of *Morus multicaulus*, by Mr. C. Downing, in America. It is well adapted to grow in pots in the orchard-house. The fruit is of a maroon color, smaller than the Black Mulberry, and juicy and agreeable. Ripe in July and August. It is an excellent variety, but of course not 'ever-bearing.'

THE *Gardener's Chronicle* thus notices the following new foreign Grapes:

FOSTER'S SEEDLING.—Bunch large, berries medium size, of a pale amber color; the flesh juicy, luscious and refreshing, equalling the flavor of Lady Downes, and like that variety having the property of hanging without shrivelling.

MESSRS. PINCE'S BLACK MUSCAT (Pince and Lucombe).—Bunch large, well shouldered; berries oval, about the same size and shape as Black Muscat; color purplish-black, with a delicate bloom; skin rather thick; flesh juicy, sweet, rich, and with a fine Muscat flavor. This is the best grape of the year, and will probably prove to be the most generally useful of all the Muscats. Awarded a first-class certificate by the Fruit Committe on Oct. 6th.

ROYAL VINEYARD (B. S. Williams).—Bunch large, tapering; berry large, oval, deep clear amber color; skin thin; flesh sweet, luscious, aromatic,

not juicy. A first-class grape, adapted for either early or late vinery; habit similar to Golden Hamburgh.

New or Rare Plants.

Rocky Mountain Aquilegias.—The Aquilegia or Columbine, has always been a favorite with me, and I have in cultivation all the old varieties and eight or ten from the Rocky and Nevada Mountains. All the latter are very showy and desirable, with very long-spurred petals; mostly forty stamened. Some of the forms are very double-flowered in their native growth, and improve much in color and size by cultivation. All these mountain varieties have the most beautiful foliage, that present a fine contrast between flower and leaf.

I see your notice, copied from the *Botanical Magazine*, of *Aquilegia cœrulea*, and placed as a California species. I find it in Utah and Nevada collections, and have had it three years in bloom. Also *A. alba grandiflorum*, from the same latitude, which is a much more showy variety.—R. O. Thompson, Nursery Hill, Nebraska.

Acer Wageneri laciniatum, a variety of Maple, which M. Pépins concluded had been obtained by seeds from Acer eriocarpum, one of the finest of the American Maples. The young wood of this new tree is purple and glaucous, and its leaves, which are very much laciniated, are glabrous above and white and downy beneath. This variety, the writer observes, from its light and carved foliage, will not fail to be chosen for the ornamentation of parks.

Descriptions and Native Country of Cannas.—*Achyras*, dark red, 5 feet, from Mendosa. *Angustifolia nana pallida*, light red, 1 foot, from South America. *Annei Warscewiczoides*, raised by Mr. Anne, a most splendid variety. *Bicolor de Java*, red and yellow, 3 feet, from Java. *Coccinea vera*, scarlet, very fine, 5 feet, from South America. *Compacta elegantissima*, large, reddish-yellow, free-flowering, 2 feet, South America. *Crenulata*, undulated or wavy foliage, fine. *Cubensis*, scarlet, fine long foliage, 6 feet. *Elegans*, deep carmine, graceful variety, 6 to 7 feet. *Fintelmanni*, yellow, magnificent variety, 3 feet, South America. *Flaccida*, dwarf habit, handsome foliage, very large brilliant golden yellow flower, 3 feet. *Floribunda*, red, shaded with yellow, 3 feet, Africa. *Gigantea*, fine scarlet, enormous leaves, exquisite, 3 feet, India. *Gigantea auriantica*, orange red, very fine, 10 feet. *Hookerii*, carmine, exceedingly handsome and graceful, 4 feet. *Kalosantha*, bright red flowers, with long petals, 3 to 4 feet. *Karsteiniana*, fine maroon, 3 feet, India. *Kegelii*, shaded carmine, 3 feet, India. *Lœtal*, yellow and red, 3 feet. *Leptophylla*, ruby, handsome foliage, 4 ft. Lagona. *Lambertii*, scarlet, 4 feet, Trinidad.—*Limbata major*, intense scarlet, edged with yellow, very striking, 4 feet, Brazil. *Lindleyana*, very remarkable foliage, 5 feet. *Lutea picta*, shaded yellow, 4 feet, Brazil. *Megehi*, scarlet flowers, very large, 5 feet. *Nepalensis*, clear yellow, very beautiful, 3 ft. Nepal. *Patens superba*, deep red, splendid, 5 feet, Rio Janeiro. *Pedunculata*, scarlet, 5 feet, Rio Janeiro. *Rosea multiflora*, salmon color, magnificent, 4 feet. *Sanguinea Chatei*, blood red, dark foliage, and stems, 6 feet. *Sellowi*, scarlet, profuse blooming, 4 to 5 feet, Africa. *Specciosa*, red, 4 feet, South America. *Spectabilis*, red spotted, 4 feet, South America. *Stenogyna*, magnificent foliage, 6 feet. *Subulata rubra*, brilliant carmine, with magnificent foliage, 3 feet, Africa. *Warscewiczii*, brilliant red, foliaged striped, 3 feet, Central America. *Zebrina*, beautiful zebra-striped foliage, 5 feet. *Variabilis*, red, changeable, 3 feet, India. *Variegata*, shaded foliage, most elegant habit, 6 feet. *Valosa*, scarlet, leaves magnificent, 2 feet, India.

Domestic Intelligence.

The Value of Winter Pears.—Is there any one of our readers who has an orchard of fine varieties of Winter pears? If there be, we would advise him to send his fruit to the New York market without delay. We have just received a letter from a gentleman, who says:—"We have been sending a few bushels of Lawrence and Beurre Gris d'Hiver Pears to New York; the former brought *sixteen dollars*, and the latter *twenty dollars* per bushel, and sold to dealers at that." Will it pay to grow Winter pears for market at such prices? What would be the revenue from ten acres of bearing trees? We plant standard pear trees twenty feet apart each way, ten acres would contain over a thousand trees. Surely such a tree would soon be large enough to yield a bushel of pears, and that would be enough to make the orchard produce from sixteen thousand to twenty thousand dollars. What would such an orchard be worth per acre? If any thing like such prices can be maintained for Winter pears, the man who has the soil suitable for their growth, in the right climate, and will inform himself how to grow them, need not ask what he shall plant. The fruit referred to in the letter quoted above, was grown near Rochester, N.Y., and surely we have in Canada, climate and soil as favorable as that in the vicinity of Rochester.—*Canada Farmer.*

This is the same old story. It has been repeated a score of times during the last ten or a dozen years. The only difference is that it is not big enough! Why not make the calculation on *dwarf* trees? This was formerly the case. It does not take a very large dwarf tree to bear a bushel of pears. Then they can be set 12 feet apart. This would give 362 trees on an acre. Ten acres would, therefore, produce 3,620 bushels of pears, which, at $16 per bushel, (not to say $20), would bring $58,920 a year!—*Genesee Farmer.*

A Vinery and a Peachery.—We enjoyed the opportunity of visiting the garden and orchard-houses of M. H. Simpson, of Saxonville. Mr. Simpson being absent, we were cordially received by his accomplished gardener, D. H. Burns, who gave us every facility for acquiring the knowledge we were in pursuit of.

Mr. Simpson's vinery is 85 feet long, 22 ft. wide, with span roof, and promenade 6 feet wide through the centre: it is divided into 3 sections, the last from the entrance being circular, and beautifully and tastefully ornamented with rare plants of variegated foliage and elegant flowers. Here the Muscats and others are grown in perfection; in the other sections are grown the Hamburgh, the Black Prince and numerous other popular varieties. To Mr. Simpson was lately awarded the first premium by the Massachusetts Horticultural Society for the best grapes grown under glass. We mention this to indicate the relative quality of his fruit. His mode of cultivation gives him 3 crops of fruit in 2 years; and his vines, notwithstanding the prediction that it would exhaust and ruin them, after 16 years, look remarkably healthful and vigorous, fruiting well and perfecting fruit in the highest degree. Trellised on the rafters are 58 vines, and on the arches 16, making 74 in all. A full crop equals about 1500 lbs. They are so arranged as to ripen in January, April and August. The cultivation is the same as that ordinarily pursued in growing grapes under glass. Fertilizers used, are guano and superphosphate.

Among his varieties is a seedling seedless grape, grown or originated by Mr. Simpson. It produced its second crop this season. We eat of it two months after being ripe, and found it of good flavor. It is certainly a novelty in its way.

His Peachery is 54 feet long, 26 feet wide 14 feet high in the centre, and 8 feet on the sides, with a span-roof. Five trees are planted through the center, and reach the top of the house, and produce 7 or 8 bushels of fruit annually, of a very superior quality. On each side, and at the ends of the building, are peach trees and nectarines growing in pots, so set the roots can feed to some extent from the bottom of them in the soil. Many pots that are wintered in the orchard-house, are removed in the spring to the garden, where they produce well, as we saw. These are repotted in October, and put into winter quarters. Among the varieties in cultivation are the Early and Late Crawford, George the IV., Admiral, Jaques' Rareripe, Morris White, White Imperial, and Reeves' Favorite, a very beautiful peach. Mr. Simpson's Peachery is so constructed that fire can be used, and is, so that the thermometer shall not go much below zero. After the middle of February, frost is kept out, there being meanwhile a good ventilation. The glass is removed about the middle of May, and netting substituted to keep off honey bees that do much mischief by perforating the fruit as it ripens; but as the netting fails to keep out the bees, and shades the fruit, the gardener said he would not recommend it.

Mr. Simpson and his gardener have introduced a method of out-door peach culture they think much of thus far. Instead of trellising on a wall, the trees are trained within about 8 inches of the surface of the ground on trellises, and pruned like his grapes, on the spur system, taking care often to nip off the upward shoot during the growing season. In the winter they are covered with swamp hay after the ground is frozen to the depth of 6 or 8 inches, and covered over with bushes, so as to prevent the covering from being removed by the wind. In this way, it is maintained by Mr. Simpson and his gardener, peaches can be annually grown without glass, or an orchard-house. Untimely covering, as of strawberries, may be the occasion of much harm. We have never visited a garden where mulching is carried to the extent it is here. Hence one reason why this garden, on very dry, gravelly land, has so remarkably withstood the drought.—*Boston Cultivator.*

Rapid growth makes a mild flavor, slow growth a strong one: therefore, grow vegetables quick and fruit moderately. The exceptions are only where size is valued higher than flavor.

Foreign Intelligence.

History of Cotton—*By Major Trevor Clarke.*

[*Concluded from page* 94.]

I have been able, by the kind assistance that has been given to me, to get together several of the numerous varieties of the Indian plant. Here is the celebrated Dacca sort—at least it pretty well answers the descriptions. Here is the Sacrosanete religiosum, if indeed religiosum it be: for, in hunting among the books, religiosum is generally found to be something else, and something else to be religiosum. It has broader-lobed leaves than the common sorts, tinged and veined with brownish pink, and bears very decidedly green seeds. I have raised it from a sample sent me under that name, by the Cotton Supply Association; and also mixed with the sort called Oopum, from the same source. Very like it, with the same green seeds, but with more acute and numerously-divided lobes, is the very interesting species arboreum. I assume it to be such, upon the authority of the Botanic Garden of Saharunpore, associated as the name is with Royle and cotton. Now this arboreum was, on many accounts, a desideratum. For years it eluded my search with the cunning of a fox. I was once fond of fox-hunting, and could hold my own across a country as well as my neighbors; but of all the foxes to hunt, for intense excitement, there is nothing like a scientific fox. I first 'put up' the arboreum fox in the covers of my old friend Tenore, at Naples, kept it for years, and never could do any thing with it, as it always showed for bloom in November, and went leafless to rest in December. Again, I got the same plant from Chiswick, but now under the name of South Sea Island. It is the acclimatised Bourbon of India. So for ten years I was 'running hare.' I then took to books, botanic gardens, and friends in the tropics. Tropical friends sent big Bombaxes and the eternal Bourbon again, with a sprinkling of acuminatum. Botanic gardens were out of the question, as they always stuck religiously to the label the captain in the navy, collector of customs, or consul's wife sent with the seed. Books were worse than botanic gardens, as almost every writer had a pet arboreum of his own. Now, for popular and general information, every Brahmin, you must know, wants a hank of Cotton of three threads round his neck for religious motives; and this arboreum, a plant nearly resembling the ordinary Indian Cotton in all respects, except in bearing a red flower, and being a decided perennial, is known to be cultivated in the gardens of priests and fakirs, and in the precincts of temples, for the purpose of furnishing the mystic threads. But travellers say that the large Kidney Cotton plant is used for the same purpose; and we read that Linnæus named another sort religiosum, as being a Cotton tree under the shade of which religious ceremonies were performed, and which furnished the sacred threads. It was afterwards said that this tree was simply a Bombax. Here I was running four foxes at once. Finally, I ran into my fox in Royle's Illustrations. It closely resembles religiosum, in the tinted foliage and green seeds. From a sample of Kupas, or seed with the wool on it, labelled "good native Cotton, Dhollerah," I raised plants with very distinct habit and foliage, with short, broad elliptical, sometimes mucronate leaves, and many hirsute zig-zag branches. The segments of the outer calyx are much expanded, so as to give them a sort of butterfly appearance. The Cotton is long and soft, and approaching in quality to the American staple.

A very fine form of the Indian plant is from one of Dr. Forbes Watson's samples, marked "From Nymansing, Assam," with thick dark green leaves, lanceolate, and wanting the small supplementary lobes; the nearly entire bracts enclose large long pods, rivalling in size those of the American plant. This sort was detected by the keen eye of the Doctor among the Indian specimens sent over to the last Great Exhibition. The staple appears bulky, strong. and, I believe, is very good. Seeds from the same packet produced a beautiful little miniature form, with small round pods. Another packet from Assam, gave me a plant somewhat like the last, but a yellowish tint in the leaf, and smaller pods. These comprise my Indian menagerie of cultivated kinds.

And now I must show you perhaps the most curious and interesting thing in my whole collection. —Dr. Welwitsch's wild African species. If we look with Darwin back into the dim pre-historical ages, and watch as it were our beautifully developed forms fading back into one first created wild type. I am afraid the dark lady of my dream would have had stiff work to spin a thread from this. The color of it is Nankin.

I must now, at the risk of wearying my readers, touch upon the all-important subject of the cultivation of American staple in India, and as it will be absolutely necessary to explain the commercial relations which the Indian and American staples bear to each other, I will read part of a capital speech made by Mr. Smith, once member for Stockport, which gives a short and masterly explanation of the subject:

"The long staple, or long-fibre Cotton, is used for making the warp, as it is technically called, *i.e.*, the longitudinal threads of the woven tissue. These threads, when of the finer sorts—for all numbers, say above 50's—must be made of long-staple Cotton; for numbers below 50's they may be made of it, and would be so made, were it as cheap as the lower qualities of the raw material. No other quality of Cotton is strong enough or long enough either to spin into the higher and finer numbers, or to sustain the tension and friction to which the threads are exposed in the loom.

"The medium-staple Cotton, on the contrary, is used partly for the lower numbers of the warp, (and as such enters largely into the production of the vast quantities of 'Cotton yarn' and sewing thread exported) but mainly for the weft, or transverse threads of the woven tissue. It is softer and silkier than the quality spoken of above, makes a fuller and rounder thread, and fills up the fabric better. The long-staple article is never used for this purpose, and could not, hower cheap, be so used with advantage: it is ordinarily too harsh. For the warp, strength and length of fibre are required; for the weft, softness and fullness. Now, as the lower numbers of 'yarn' require a far larger amount of raw Cotton for their production than the higher, and constitute the chief portion (in weight) both of our export and consumption; and as, moreover every yard of Calico or Cotton-woven fabric, technically called cloth, is composed of from two to five times as much weft as warp, it is obvious that we need a far larger supply of this peculiar character of Cotton, the medium-staple, than of any other.

"The short-staple Cotton is used almost exclusively for weft, (except a little taken for candle-wicks), or for the very lowest numbers of warp, say, 10's and under. But is different in character from the second description, as well as shorter in fibre; it is drier, fuzzier—more like rough wool; and it cannot be substituted for it without impoverishing the nature of the cloth, and making it, especially after washing or bleaching, look thinner and more meagre; and for the same reason it can only be blended with it with much caution, and in very moderate proportions. But its color is usually good, and its comparative cheapness its great recommendation.

"It will be seen, therefore, that while we require for the purposes of our manufacture, a limited quantity of the first and third qualities of raw Cotton, we need, and can consume, an almost unlimited supply of the second quality. In this fact lies our real difficulty: for, while several quarters of the world supply the first sort, and India could supply enormous quantities of the third sort, the United States of America alone have hitherto produced the second and most necessary kind."

I have read most attentively the history of the Indian experiments. They tell of the well-directed skill, the stout and willing heart, the rough hard toil and untiring energy of the Royles, Wights, and other earlier and later laborers in the field of Indian experiment. They prove that good useful Cotton, such as goes by the name of good middling New Orleans, in Manchester, can be, and has been, produced on Indian soil. The accounts, the authentic accounts, and the samples received from time to time, only strengthen the conviction. The long series of experiments carried on under the auspices of the Indian Government, for now nearly a century, go to prove that the principal impediments to the production of good Surats, are the filthy habits of the gentle Hindoo, and the religious prejudices of his priesthood.

In the case of the cultivation of the exotic species by Europeans or Natives, the casualties would appear not to differ greatly from those to which every agricultural crop is subject in India or England either. Even the elements can be coaxed if not controlled. Irrigation is now no problem, and the periods of sowing can be so arranged that the wild monsoon may foster rather than injure. Each and all of these difficulties seem to have vanished wherever the strong will of these gallant pioneers had determined they should do so. Royle alludes to experiments in hybridization once or twice, but no details or authenticated results have been recorded. A year or two ago, hower, certain of the American sorts were intercrossed, both by myself and Dr. Bonavia, of Lucknow. We are now awaiting the final report of the Doctor's experiments. Mine produced what is apparently a very beautiful and prolific Cotton, second only, according to Watson—the Cocker of Cotton fibre—to the best Sea Island.

Artificial Rockwork.—Having at hand plenty of large, rough stones, broken bricks, or stony rubbish of any kind or color, proceed with these to imitate the form of natural rock as nearly possible. Rough, bold, angular projections, and deeply-formed chasms, are the principal features in natural scenery which please us most. A rock with a flat, unbroken surface, whether horizontal or perpendicular, presents too much sameness to be pleasing to

the eye; therefore, in imitating nature, the projections should be varied and bold; and unless ruggedness and intricacy form principal features in its composition, it will loose much of its effect. If the rockwork be on a large scale, it should not be one continued line, but broken at intervals; in one part lost beneath the surface of the earth, and again rising in another part, and resuming its sinuous form.

So far, there is little difference between this and the common method of making artificial rock. When, however, every stone has been arranged to suit the eye, the interstices between them are to be filled up with any kind of rough mortar. Of course fissures and similar places, intended for the plants which are to cover the rock, must be left open, so that the roots may penetrate to the soil beneath the stones. The next operation is to daub the whole mass over with roman cement. For this purpose the latter should be mixed with water, until it is of the consistence of thick paint, in which state it may be applied to the stones with a large painter's brush. The spaces between the stones having been filled with rough mortar, prevents the cement from being wasted. The thickness of the latter on the stones need not be more than the eighth of an inch; it will unite the whole into one mass; and rockwork thus constructed, is, beyond all comparison, far more natural than that made in the usual way. It has none of that disjointed appearance which usually accompanies rockwork made without cement.

After a few months' exposure to the weather, rockwork thus formed, (if skillfully made) cannot, without careful examination, be distinguished from a natural mass; it will soon assume the appearance of nature, for mosses, lichens, etc., will soon cover all but the most prominent parts. If the cement be of too light a color, which, for some situations may be the case, a little lamp-black or soot may be mixed with it. Care must, however, be taken that no substance which may make the cement more porous is used, otherwise it will peel from the stones after a hard frost. For the benefit of those who are not accustomed to using cement, I may mention that no more should be moistened at once than can be used in a short time; if the cement be good, it will quickly harden, and will then be in a manner useless.—*Gardener's Weekly.*

Improvement of the Chrysanthemum.—The Chrysanthemum Exhibitions which have been held this year in the metropolis and in other parts of the kingdom, have been fully equal in merit to those of former years. Perhaps there is no exotic cultivated in this country with which florists have been more successful than they have been with the Chrysanthemum; more particularly as regards the raising of new varieties. We can remember a time when our collections included those kinds only which had been sent to us from abroad—some 50 or 60 in all. Thanks, however, to Mr. Salter, of Hammersmith, and others, who have raised so many beautiful varieties from seeds, our gardens contain now upwards of *a thousand new kinds.* And then, too, with these new sorts we have obtained flowers of almost every hue of color, the colors of many of them being particularly bright and effective.—*Gardener's Chronicle.*

Whenever a plant suffers the loss of root, always prune off a corresponding portion of the head.

Fuchsias and Mesembryanthemums for Baskets.—The use which is made of Hanging Baskets for the cultivation of flowers in conservatories and other plant structures, gives an especial interest to the appearance of a subject well adapted for such a mode of growth. We have often felt some degree of surprise that the lots of glowing Mesembryanthemums, and some other succulent plants of suitable habit to be found in the gardens of here and there a lover of succulents, are not more frequently seen employed for this mode of culture, which would most assuredly suit them admirably; it is not, however, our present object to refer further to these. We only wish to mention a novelty which seems to have been expressly designed for a basket flower.

It is sufficiently well known that Mr. G. Smith, of the Hornsey Road Nursery, is a raiser of new Fuchsias,—indeed, he is perhaps answerable for the production of some of those fat and full-faced ones which have been the subject of recent remark in our columns. Be that as it may, there occurred amongst his seedlings last year, one which refused to grow upwards, but persisted in thrusting its branches down over the sides of the pot. When it came to flower, it proved to have too little of the 'plethoric' character to be regarded as of any value as a florist's flower, but was just an ordinary common-place Fuchsia in respect to its blossoms. The habit, however, was noticed to be very peculiar, and quite dissimilar from that of other varieties. No upright stem was developed, but the whole of the branches were directed downwards, giving out branchlets and flowering freely: having, in fact, a thoroughly dependent or drooping character. Now as Fuchsias are very good plants for the system of basket culture, which has grown to be so popular, the new Fuchsia, *dependens*, may probably be found to be especially suitable for being grown in this way, if indeed it does not put on an entirely new face when it comes to be propagated. At any rate it will be worth inquiring about amongst the novelties of the ensuing spring, by those who adopt this style of decoration, and we invite their attention to it.—*Gardener's Chronicle.*

Horticultural Notices.

PENN'A. HORTICULTURAL SOCIETY.

DISCUSSIONAL MEETING, NOV. 1ST, 1864.

Mr. R. Kilvington in the chair.

Hon. E. Satterthwait presented an Essay on

"VEGETABLES ALL THE YEAR ROUND."

(*For Essay see page* 105.)

Mr. Meehan recommended the cultivation of Brussels Sprouts. If taken up with a ball of earth, and kept in a shed, with slight protection, they will keep well and grow all winter. Broccoli also, put away in a cellar will make heads in winter.

The Chairman also spoke approving of Brussels Sprouts. Sea Kale is excellent, easily blanched with flower-pots and leaves. It is much superior to Cauliflower, but is quite bitter, unless blanched. Cardoons are of a similar character.

Mr. Jones had found it, after many years of trial, both as gardener to Girard College and elsewhere, difficult to introduce these articles. A few English, German, or French people like and purchase them, but the public generally will not have them. Okra, Salsify, and Endive will not sell to any extent.

The Chairman had raised Mushrooms many years ago of fine quality, but scarcely any one would buy them. They are now just beginning to be generally known.

Mr. Harrison stated that a relative had kept Sweet Corn in the husk until January, fresh and tender. The outer portion of the husk was removed and the ears were packed together in small boxes, and placed in a cool dark well ventilated cellar, the windows being kept open till hard frosts set in.

Mr. Satterthwait cuts it in the green state, pulls off the outside husks and then shocks it in the field. He desired to hear the experience of any one who had been successful with Cauliflowers in the summer. He was unable to obtain good heads except in hotbeds.

The Chairman formerly raised good Cauliflowers and keep them in sheds. He advised the use of cow manure for them.

Mr. Jones said that Mr. Reiley, gardener at the Insane Hospital, brought fine Cauliflowers to our Society's displays in November for a number of years.

Mr. Meehan used to raise Lettuce, of large size, in pots in a Rose-house, but could not sell it in February. Now the demand outruns the supply.

The discussion now took a discursive and general character, and after a free interchange of experience on the culture of some kinds of vegetables, the meeting adjourned.

DISCUSSIONAL MEETING, FEB. 7TH., 1865.

President D. R. King in the chair.

Mr. Henderson's Essay, given in our last, on

PROPAGATION OF PLANTS BY CUTTINGS,

was presented, but the heavy storm prevented the attendance of many members who expected to be present.

Mr. Meehan remarked that there was but one point on which he differed from the essayist. His experience was that the fungus was as bad in low temperatures as in high ones. Was formerly of the opinion that low temperature was most favorable, and had always indifferent success with many kinds of soft cuttings. Since he resorted to high temperature, had the most satisfactory results. The fungus seemed to defy all rule, coming as it does when and where it suits itself. It seldom injured rooted cuttings,—and as the higher temperature favored quick rooting, the sooner they rooted the safer they were.

He thought Mr. Henderson's advice good about being indifferent to cutting below a joint, when soft wood was used for cuttings,—but had found it difficult to get roots from hard wood of such things as Salvias, Verbenas, etc. No one would use this when he could get good soft wood, and a fair heat; but when he had to use this hard wood or none, it be well to bear this in mind.

Mr. Robt. Kilvington said that Mr. Henderson's advice in reference to the majority of cuttings was excellent; but the whole class of plants that had hard joints or nodes, were better cut at those nodes or joints. The sap in descending was obstructed at these joints, which was in reality what constituted the joint in fact; and roots would more readily push from this obstruction than elsewhere. Some grass-like plants could only be made to push from these nodes. Grasses were always hollow stemmed. The nodes were the only solid places about them.

Mr. Mr. Meehan remarked, that in strictness all grasses were not hollow stemmed. The *Panicum crusgalli* had a solid culm; and Indian Corn, which belonged to the grass family, was solid also.

The President described a Propagating-pit, erected by Mr. David Nelson, and heated with a hot-water tank, and from a Daniels' boiler, which was a great success; and referred to Mr. Strong's article in the *Gardener's Monthly*, in regard to tanks making too much moisture, and the house damp; and inquired of Mr. Meehan if he had any difficulty of this kind.

Mr. Meehan said the boiler referred to evidently had not enough work to do. It made the sand so hot that moisture was being continually evaporated. His own boiler, for propagating purposes, was but a small water-back, holding only about two quarts. The tank was twenty feet from this small boiler, and connected to it by 1½-inch gas-pipe. The tank was 35 feet long and 3 feet wide; the water entered with a moderate fire, at a temperature of 95° or 100°; and after circulating 70 feet, returned at about 85°. The tank was covered with half-inch weather-boarding, so close that no moisture could get through, and the cutting pans and boxes were plunged in tan, in a frame fitted over the tank. There was quite heat enough for his purpose, and not enough to evaporate the surface moisture to an objectionable extent.

Mr. Pollock thought slate or metal a better covering than wood.

Mr. Meehan preferred wood. More heat came through the wood than through iron or slate. These minerals absorbed heat more rapidly, and to the touch seemed hot, while wood seemed scarcely warm; but in practice he had found that the wood seemed to permit the heat to pass through into the plunging material more readily than metals. They seemed to "hold on to what they get."

The President referred to the practice of propagating Grapes from green cuttings, and invited members present to explain why they made worse plants than those raised from hard wood.

Mr. Meehan replied, that there was no reason why cuttings of green wood should make worse plants than from ripe wood, if the after treatment was attended to. A green cutting had but three months to do its rooting, while a hard eye had six. With the same number of months care, it would make quite as good a plant. Propagators of rare trees and plants, struck every thing nearly from young wood, and had done so for ages; but as soon as they were rooted, they did not put them away at once to take care of themselves, as people expected these green cutting grapes to do, but petted them for a few months, until the wood got firm. He had seen, at H. E. Hooker & Co.'s, at Rochester, N.Y., green cutting grapes as fine as any others could be.

The President, in reference to Mr. Meehan's preference for wooden coverings for tanks, feared it would breed fungus, that would prove very injurious to cuttings. He thought it was a mistake to put the boiler too far from the fire. He thought of having his boiler lowered. If actually in the fire, surrounded by live coals, he thought it would be still better. In a common bar-room stove, the cylinder in contact with the coals would be red hot, while just above the line of fire, it would be black.

Mr. Meehan thought the best place for the boiler was where the draught would most readily strike it. Immediately over the fire was not so good as several feet away, where the flue was led straight away from the furnace, as his was. His boiler was several feet out from the perpendicular line of his furnace.

Mr. Pollock thought Mr. Meehan's views of the proper position of the boiler incorrect. He had found the best results when the boiler was fixed near and immediately over the fire.

Mr. Eadie inquired what conclusion members had come to in regard to the Verbena disease. He thought it was caused by an insect.

Mr. Meehan had not examined the matter closely, but attributed it to a form of mildew.

Mr. Eadie had found Tobacco-water an excellent cure for it, which confirmed him that it was an insect, which the Tobacco-water would kill.

Mr. Kilvington said Tobacco-water contained much nitre, of which the Verbena is fond, and acting thus as a stimulating manure, it may have caused the plant to grow out of and overcome the mildew, as he thought it was.

MONTHLY DISPLAY & BUSINESS MEETING, FEB. 21.

The best collection of Plants in Pots, was awarded to Donald McQueen, gardener to J. Longstreth. Amongst them we noticed the old, but not rare, Veltheimia viridiflora, and an old, also very scarce Arum, with the flower twisted so as to represent the head of a bird. We have not seen this in flower before, and the plant not being named, we can but describe it.

The best design for a table of cut flowers, to the same. This was but a simple pyramidal bouquet, on an elevated stand, the base of the bouquet part being ornamented with pendants of the flowers of *Begonia heracliifolia*.

There was another very pretty design exhibited, but not entered for competition, by Walter Bailey, gardener to the President D. R. King. It was formed of three baskets, set one on another, each smaller than the one beneath; the whole supported by a square base. The base was covered by the common green *Marchantia*, found very plenty near all springy places. The baskets were covered by the fronds of the fern *Nephrolepsis bulbosa*, which seem to answer admirably for these purposes.

The best Hanging Basket, to Donald McQueen, This was principally filled with Lycopodiums, variegated Periwinkle, and Senecio scandens; all very luxuriant, but none in flower.

Best pair of Hand Bouquets, to F. O'Keefe, gardener to Joseph Harrison. They were filled with rare orchidaceous flowers, Denbrobium nobile being particularly attractive.

In the Camellia line, Messrs. Peter Mackenzie & Son still proved themselves the chief Philadelphia Camellia growers. Their first premium six cut flowers were, Imbricata, Reine des Fleurs, Fordii, Double White, Fimbriata, and Lady Hume's Blush. The last one of the finest flowers of the variety we have seen for some time. The list is interesting, as showing that, with all the many 'novelties,' the good old kinds still carry the palm.

The same gained the premium for the best collection of cut flowers; but they wese unnamed, as the design of the premium offered intended collections should be,—for the public information.

Six best Anœctochilus was awarded to F. O'Keefe. The plants were small but remarkably healthy.

A premium was again awarded to Jacob Huster, gardener to Edwin Forrest, for Radishes; and an extra premium of $5, to W. J. Young, gardener to Stephen Morris, for Lettuce, Cucumbers, and Tomatoes. These were remarkably fine samples—the Tomatoes, especially. The last stamps Mr. Young as one of our best rising gardeners,—as to succeed well with forcing Tomatoes is a good test of skill.

T. P. Manlove exhibited a fruit of the Chinese Quince Pear, which filled the whole region of the fruit tables with a delicious fragrance. We have heard that it makes a delicious preserve, far superior to the common Quince; and as it bears fruit freely, and on quite young plants, it is remarkable that it is not oftener seen.

Among the articles from the President's garden, on this occasion not for competition, was a magnificent Bridal Chaplet, made exactly to our taste. The principal point of novelty was in the use made of variegated-leaved plants, and the introduction of just enough rosy-tinted flowers with the white to give *life* to the wreath. The principal variegated leaves were from *Pittosporum tobira variegata*, which were arranged so as to form an edging on each side of the back of the wreath; and where the wreath was tied the variegated leaves of Arundo donax were employed, the tapering ends looking just like ribands, except that they were brighter and lovlier than any work of art could be.

The exhibition, on the whole, seemed to inaugurate a very successful season. The premiums this year are very liberal over past years, and all can compete, whether members or not, from any part of the Union.

An interesting episode was an address, at the invitation of the President, by Mr. F. F. Merceron, of Catawissa, Pa., describing his recent examination of Mr. Nice's fruit house, at Cleveland. Most of the members, we found, after the lecture, were still incredulous as to whether fruit can be as good when they come from his "house" as when fresh cut from the vine; but we suppose the harder to convince the better the convert when converted.

RHODE ISLAND HORTICULTURAL SOC'TY.

We are pleased to learn from the Secretary that this institution is in a very flourishing condition. We should be glad to have details of its doings, or contributions from its chief members occasionally, for the *Monthly*, as Rhode Island gardening has a high character with the 'craft.' The following is a list of the Officers for the ensuing year:

President—Wm. Viall, *Treasurer*—B. W. Ham,
Vice-Prest—W.S. Patten, *Secretary*—J. E. Lester,
Cor. Sec'y—A. M. Gooding, [Providence, R. I.

AMERICAN INSTITUTE HORT. SOCIETY.

REPORT ON THE GREELEY PREMIUMS.

A meeting of this Association was held on Tuesday evening, February 21st, 1865, at the rooms of the Institute, in the Cooper Union Building, in the City of New York.

Vice-President Isaac M. Ward, of New Jersey, in the chair.

Mr. Wm. S. Carpenter, from the Committee on "Large Fruits," made the following Report:

"The Committee held a meeting on Friday evening, Feb. 11, to consider whether the award of the "Greeley Premiums" should be made at once, or left open for another season.

At the request of all the members, Dr. Warder,

of Ohio, and Dr. Sylvester, of Western New-York, were added to the Committee.

The meeting was organized by appointing Dr. J. A. Warder Chairman, and Mr. P. T. Quinn of N. Jersey, Secretary.

As the premiums offered by Mr. Greeley were made known only a few days before the exhibition of the Horticultural Association of the American Institute in September last, the Committee, in justice to themselves and the public, after freely discussing the relative merits of the fruits already presented, passed unanimously the following resolutions:

Resolved, That the award of the "Greeley Premiums" be postponed until after the exhibitions of the Horticultural Association of the American Institute, to be held in the middle of September, the second Tuesday in November, and the second Tuesday in December, 1865.

Resolved, That invitations for competition be extended to the growers of all varieties of Apples, Pears, and Grapes, except the following kinds, specimens of which have been received by the Committee:

Apples — Hubbardston Nonsuch, Fallawater, Conkling's Seedling, Swaar and Baldwin.

Pears—Bartlett, Lawrence, Dutchess d'Angouleme, Dana's Hovey.

The object in extending the time from Sept. 15 to the second Tuesday in December is to give persons offering *late* varieties of fruits an opportunity of presenting them when fully matured.

It was resolved that Mr. P. B. Mead be requested to act with this Committee in awarding the premiums on the Grape, which, at Mr. Greeley's request, is to be decided by that Committee.

Mr. Greeley requests persons sending fruit for competition, to forward it to the Committee at the American Institute, and in no case to him. Several lots have been sent to the *Tribune* office, which have not reached the Committee.

The Committee then adjourned, to meet subject to the call of the Chairman.

P. T. Quinn, *Sec'y.* J. A. Warder, *Chairman.*

John A. Warder, Charles Downing, Isaac M. Ward, Wm. S. Carpenter, P. T. Quinn, Wm. L. Ferris, E. Ware Sylvester, *Committee.*

The Report was on motion adopted.

The Chairman introduced to the meeting Dr. Isaac P. Trimble, of New Jersey, who delivered an interesting and instructive Lecture on the "Nature and Habits of the Measuring Worm," one of the great pests of our fruit and shade trees, giving a detailed account of his researches and examinations chiefly in regard to this worm. His remarks were illustrated by numerous drawings of these worms in every stage of their development, and of the leaves upon which they feed. After detailing the numerous experiments tried by him for ridding the trees of this insect, and giving an account of the various birds who regard this worm as a delicacy, he concluded with some directions for dealing with them, the best mode being to jar the trees at stated periods, and to destroy the worms as they fall.

At the conclusion of the lecture, which lasted for nearly two hours, Prof. Tillman remarked that the audience had been highly entertained and instructed by Dr. Trimble. He had chosen a topic particularly attractive to those living in cities, who have seen the havoc of the measuring worm among the trees of their squares and parks. The manner in which the lecturer had commanded the attention of the audience, by giving extracts from his diary made last year during his examinations in this and neighboring cities, was novel and entirely successful.

The beautiful colored pictures of insects, leaves, and birds, prepared by Mr. A. Hochstein, used to illustrate the lecture, had added very materially to a correct understanding of the subject; and the audience could say they had had all the experience of searching for the greatest enemies of our trees, without the trouble of disposing of them. He hoped the lecturer would soon give to the public in a printed form, the results of his researches, and concluded by offering a resolution of thanks to the lecturer for his able exposition of his subject, with a request that a copy of the lecture be furnished for the annual volume of the Transactions of the American Institute, which was unanimously adopted.

Mr. James Hogg, of Yorkville, exhibited 10 new variegated-leaved plants from Japan, sent to him by his brother, Mr. Thomas Hogg, now in that country. Mr. Mead informed the audience that this was the first time these plants had been seen in this country or Europe.

Mr. Hogg stated, that at a future meeting of the Association he would exhibit other varieties of Japanese plants in bloom, and the curious methods of grafting which these people adopt, and which is unknown to our nurserymen.

John W. Chambers, *Secretary.*

ADRIAN, MICH. HORTICULTURAL SOC'TY.

At the Annual Meeting, held January 18, 1865, the following officers were elected for the ensuing year: *President*—Dr. Woodland Owen. *Secretary*—U. L. Linnell. *Treasurer*—B. W. Steere.

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

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

MAY, 1865. VOL. VII.---NO. 5.

Hints for May.

FLOWER-GARDEN AND PLEASURE-GROUND.

As we said in in a recent editorial, 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 very artificial styles prevail, the topiary art may be called in, and good effects result from the use of the knife or shears on certain plants. Much may be done with wire. We once saw a circular bed, in the center of which was a very fine specimen of Lamarque Rose, trained on a single stem to the height of six feet, and then the head trained on an umbrella-shaped wire frame. Around the bed was a wire frame about nine inches high, slightly inclining outward, on which was Tropæolum canariense, and Ipomea clamoclit (crimson Cypress-vine), white would do as well. From this frame to the umbrella head rays of wire were fastened, and the vines run up, but never allowed to get in amongst the rose branches. The bed itself was filled up with Salvia patens, and when we saw it in September, was a mass of blue. It was difficult to conceive any thing more beautiful than the whole presented, and it reflected great credit on the taste of the lady who conceived the plan. and the skill of the gardener who had so well executed it.

The system of bedding plants has called for a new class of characters. Formerly viewed as 'florist's flower, a Verbena, for instance, would require roundness of form in the individual flower as a first requisite. The lobes of the edges of the border should seem so to overlap each other as to form a perfect circle. Then there should always be an 'eye,' and the colors of this eye, and the margin beyond, be well defined, and not run gradually into each other. But for bedding purposes, a new and striking shade of color, a free blooming character, neat habit of growth, and power to endure a hot, dry sun, are of far more im[illegible]; and the energies of our improvers [illegible] to this end. Seedling raising [illegible] very interesting, and we would recommend all our amateur friends to try their hands at it. It is a highly interesting source of gratification even in it itself. The way to proceed is to note some variety that approaches nearly to the desired shade, and select seed from these. The next season some flowers will be produced probably deeper, and in a few generations, by careful annual selection each time, the desired shade can be obtained. The old notion that "like produces like," is a fallacy. There is always more or less of difference in the progeny from its progenitors, though most generally so slight that we do not observe it; but a little art added to nature's own process, brings out the variations very remarkably. Where quite different characters to the original are desired, hybridization may be resorted to. For instance, we may have an excellent habit of growth, and free blooming quality, but a dull colored flower: a kind as nearly allied to the good qualities as possible, but with better colors should be selected with which to fertilize the other. Flowers

should be selected for fertilization soon after they have expanded, and the one used as a fertilizer chosen when matured. The flower of the former may then have the latter shaken over it, and fertilization will probably ensue. This is a rough method. The passage of a camel-hair pencil from one flower to another is better: the pollen from the stamens of the one is more certainly carried to the other. When hybridizing is carried on with nicety, it is best entirely to remove the anthers with a pair of scissors before applying the pollen of the other kind. This lessens the chances of self-fertilization, and renders the operation either a certain failure to produce seed at all, or a different race from its parents by the seeds so produced. New fruits may be produced in the same way. It was at one time supposed all these productions were mules, and though they might produce flowers in their progeny, would not produce fruit, and so the operation would not benefit the pomologist. But this is now found not to be the case. The progeny is sometimes barren, but this is rather the exception than the rule.

The first week in May is usually the time to set out Dahlias. They do best in a trenched soil, say 18 inches deep at least, and prefer cow-manure to 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 should also be planted this month, but they like a rich sandy soil; though, like the Dahlia, they do not like dry soil. As a rule, Tuberoses that flowered last fall will not do so this, but the offsetts will do so the year after.

Amaryllis formosissima, or the Jacobea lily, flowers usually very beautifully in the open border in August, and should now be planted. Many kinds of annuals that have been raised in pots or boxes, in windows or frames, should be transplanted into the open ground whenever the weather is favorable, that is showery or dull. The pots containing them should be well watered before the plants are lifted, and the soil into which the seedlings are planted is best dampened, or what is perhaps better, well watered the day before, so as not to require a heavy watering immediately after the seedlings are planted. Too heavy waterings render the ground hard, and this, when dry, becomes unsuitable to the growth of plants.

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 effects. 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.

Trellises, and stakes for climbing plants and vines, should be put in at or before setting out the plants. These plants always seem to grow with more freedom and vigor when they can find something at once to cling to. Climbing vines add greatly to the interest of a garden. They can be trained into all sorts of forms and shapes; and many of them, for gracefulness of form, or beauty of their flowers, cannot be excelled by any other tribe of plants.

FRUIT GARDEN.

Look out for insects. If taken in time and destroyed, they seldom become troublesome. These rebels gain strength only by time. Fruits trees swelling their fruits, are always improved by a soaking of water just before ripening. This is particularly true of the Strawberry. Corn-stalks make a good mulch for the Strawberry,—something is necessary to keep the fruit clean. As fruit trees push out new shoots, pull out vigorous ones, to strengthen the weaker. Thin out fruit where there is danger of over-bearing, which newly planted trees often will do. Blackberries and Raspberries, set out in spring, may kill themselves by overbearing. It is pardonable to wish for some fruit the first year. If a tree seems to be growing freely, some fruit may be left. Cut out Black-knot, or any symptoms of disease that may appear, and as they appear.

VEGETABLE GARDEN.

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.

Melons, Cucumbers, Corn, Okras, Squash, Beans, Sweet Potatoes, Lima Beams, Peppers, Egg-plants, Tomatoes, and other tender vegetables that do not do well till the sun 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 comparatively high priced, their ends should be charred.—This will make them last some years.

Drumhead Cabbage, Savoy, Red Cabbage, Autumn Cauliflower, and other kinds of fall greens, should be put out at once. The soil can scarcely be too rich for them.

Communications.

PLANTING AND MANAGEMENT OF CITY GARDENS.

BY CHRONICLER.

The planting and management of City gardens should vary to suit the different sizes, soils, locations and exposures of the gardens, and the forms of the buildings to which they are attached. Some kinds of plants delight in shade and moisture, and others thrive best in sunshine and dryness. The prevalent mode in Philadelphia, of having long ranges of back buildings, leaves a narrow strip between every two houses, which is divided by a close board fence. Where these strips are on the north side of the buildings, very few kinds of plants will thrive in them, as they only get the sun an hour or so during the long days of summer. The only kinds of plants which I have got to succeed, are Aeuba japonica, the green Euonymus japonica, Cryptomeria japonica, Tree Boxwood, Evergreen Privet, Evergreen Honeysuckles, Mahonia, Hydrangea hortensis, Ivy upon the walls, and Periwinkles as surface creepers; but where these strips are on the east, west, and south sides of buildings, many more kinds of plants can be grown, and to the above may be added Rhododendron (maximum and ponticum), Kalmia latifolia, Jasminum (officinale, revolutum, and the hardy yellow), Spiræa (prunifolia and Reevesii), Wiegelia rosea, Clematis (flammula and virginica), Forsythia viridissima, Philadelphus, Calycanthus floridus, Ferns, and for creepers Tradescantia zehrina, etc.; Native grape-vines grow and fruit well. In the open parts of such gardens, nearly all kinds of cultivated hardy plants grow well, but ever-blooming Roses should greatly predominate, as they are in bloom nearly all the growing season, and the flowers are sweet-scented. A variety of flowering shrubs may be planted to make a contrast. Cydonia, Robinia, Lagerstrœmia, Deutzia gracilis, flowering Almond, etc.; and of evergreen shrubs, Arborvitæs, etc. Grape-vines, trained upon arbors to give shade where necessary, are positive requisites both for their shade and fruit. Dwarf Pear trees are the best fruit trees to grow in small gardens, as a greater number and variety can be grown than of any other; but Apricot and Nectarine trees thrive admirably and fruit abundantly, and as these two kinds of fruit are seldom seen for sale, it would be a great acquisition to grow them. Plums and Peaches also do well, and yield large crops; but it is only where the gardens are at least 100 feet deep, that fruit trees should be grown. The flower borders alongside of the fences should never be less than two feet broad, so that the dwarf flowers will not be too much shaded by the taller plants trained upon the fences. If the residents leave the city during the summer months, only such plants as will bloom early and late must be set out; but if they remain in the city, then a large number of perpetual summer-blooming plants should be used. A large number of early blooming bulbs, Pæony, Dielytra, early Phlox, Polyanthus, Daisy, Plumbago cœrulea, Foxglove, Sweet William, Canterbury-bells, etc., will all bloom before July; and for late flowers, the Rose, Dahlia, Geranium, and a good collection of Chrysanthemums, will continue the bloom until Christmas. All the flowering shrubs above-named will bloom before July. As a general thing, it is better to set out plants in small gardens than to sow flower seeds; yet some seeds should be sown, as Mignonette, Sweet Alyssum, Phlox Drummondii, Portulacca, Eschscholtzia, China Pink, China Aster, Mule Pinks, Camellia Balsam, etc., last longer and bloom better from seed. Among climbing plants, none can excel the Wistaria sinensis for profusion and beauty of bloom, and it is delightfully scented.

The gardens attached to [illegible] charitable institutions in the city, should be ornamented as much as possible in the forepart; the roads should be broad and well gravelled, and the grounds planted with shade trees, ornamental shrubbery and flowers, all properly arranged to give comfort as well as to beautify. It is a mistaken notion of many that trees near a house tend to make it damp, on the contrary they absorb much moisture from the ground, and give it off to the winds and heat.

I would here make a few remarks on our City Parks. I now refer more particularly to the Fairmount Park. Situated in a beautiful location, the Schuylkill river flowing by it, and mountains and valleys comprised in its site, it has been so far almost entirely neglected as far as ornamentation is concerned. It has cost a large sum of money. Quarrymen, carters, pickers, and laborers have been at work making roads through them, planting a few Maple trees, and repairing the buildings; and a corps of policemen are stationed to guard the grounds; but as yet no gardener is employed to embellish them, and keep them in good order, or

should there be, there is no fruits of his labor. Where are the groups of beautiful shrubbery, ever-blooming Roses and odoriferous vines to enliven the grounds? Where are the clumps of Pæony and other herbaceous plants of gorgeous bloom; the beds of summer-blooming flowers of endless hues; the lines of Dahlias and Chrysanthemums, to furnish autumnal flowers?

In sad contrast is this with the Central Park, New York. There great and almost insurmountable difficulties were to be overcome. The hills and the valleys were to be made; the lakes, aqueducts and fountains were to be constructed; engineering and landscaping to be attended to; and yet, amid all the labor and difficulties, the comfort and the pleasure of the visitors were not overlooked. Trees and shrubs have been planted wherever there was soil enough to cover the roots, and in their season the flowers shed their fragrance over the entire place, to the delight of those who inhale it.

If a skillful gardener was employed there, one who is well versed in floriculture, arboriculture, graminiaculture, constituents of soils and the proper arrangement of all embellishments, Philadelphia would soon rival New York in the beauty of her Parks and pleasure-grounds.

A few words here as to the planting and management of such grounds. As most of our pleasure-grounds have already been furnished with large growing trees, I shall first speak of improving those already planted. The [illegible] of the grounds formed by the walks, [illegible] of the trees, should be studded with groups of shrubbery. The shade trees should be so pruned that none of their branches would be less than ten or twelve feet from the ground, and trimmed so as to let them shade the grass and shrubbery as little as possible. Such plants as Magnolia glauca, Lilac, Mock Orange, Yellow Barberry, Calycanthus, Chinese Honeysuckle, Chinese Wistaria, Jasminum officinale, and Clematis flammula, would look beautiful in their flowering season, and have a pleasing effect at all times,—the vines should be trained upon pillars. If, on the outside of these clumps borders of smaller plants be placed, it would add greatly to the effect.

In laying out new grounds, care should be had to having the walks broad, and well shaded with stately trees, with spreading heads, and an evergreen and deciduous alternately, all planted at uniform distances from the edges of the walks, say five or six feet, and at such distances from each other as to let all grow to a good size and symmetry.—Fast-growing trees should be alternated with them in planting, to early give shade until the others shall attain sufficient size, when they should be cut down. I would plant only a single row of trees around the enclosures. The centers should be filled as before described.

For proper cleanliness, a hole should be dug in the centre of one of the forms, surrounded by a circle of ever-blooming Roses or other shrubbery, into which the falling leaves and other cleanings of the grounds should be thrown: this will form an excellent compost for the trees and shrubs, to be spread around them after the grounds have been closed for the winter.

In the management of city parks and gardens, cleanliness, judicious pruning, and destruction of insects and weeds, are the first essentials, as the nothing valuable can thrive where these are not attended to.

In conclusion I would add, that a much greater interest could be attracted, and a beautiful ornament added, if the authorities would place a handsome statue of Washington in the square which bears his name, in this city.

MILDEW ON ROSES.

BY E. FRYER, NAPERVILLE, ILLS.

Last fall, having taken up a large number of Roses for spring planting, I found many varieties badly affected by the mildew (*Erysiphe parmosa*). This was probably owing to the long drought of the summer previous. Those that were entirely leafless, or became so afterwards, and had the stems deceased, were washed, or rather painted, with sulphur dissolved in warm water, and made so that it could be applied with a common paint brush. The plants were set in the greenhouse, and when fire heat became necessary in the house, the hot-water pipes were sprinkled over with flour of sulphur twice within a week. No other application of sulphur was made for two months, when, to my surprise, the first leaves that came out on some of the varieties were mildewed. These leaves were carefully picked off, and not thrown on the floor, but carried outside and given to the winds. But I did not lose faith in the sulphur remedy. Since then I have applied it every week on the pipes, choosing a clear day, when the atmosphere of the house was warm. I also shook sulphur on the leaves, through a small bag made of fine bolting cloth, fastened to the end of a rod long enough to reach through all parts of the house, which, by being gently jerked, throws the sulphur in minute quantities, about as small as the atoms of a vapory mist, though the whole atmosphere of the house, coming in contact with the leaves of the plants on every side. The Roses are now in full leaf, and there is no sign of mildew on any of them; even the hardest cases are free from it, and are pictures of health, covered with buds,—a condition necessary to their successful propagation.

I know that there is nothing new in the sulphur remedy for mildew. It is known to gardeners and horticulturists generally; but yet there may be some who, in particular locations, and perhaps particular seasons, may find the disease unusually hard to contend with, to such I would say, use sulphur plentifully,—there is little fear of using too much so long as it is not ignited; but in order to be effectual it must be used repeatedly, perseveringly.

Perhaps one of the principal causes of mildew on Roses, and other plants under glass, is due to the practice of "giving air," when the house gets warm though the external atmosphere may be but little above freezing point. The seeds or particles of mildew are ever present in the atmosphere, and this sudden cooling seems to be the condition most favorable for its development. Let the theory be what it may, the practical gardener knows the danger of letting in cold currents of air.

It will do no harm to Roses or other greenhouse plants, if the temperature of the house on a clear day in winter or early spring, gets up to 75° or 80°. No air should be given, even if the outside temperature should be 45°.

As prevention is better than cure, I would recommend the use of sulphur, as detailed above, early in spring, even if there is no mildew. Plant-growers should be always prepared to keep the enemy out, and with suitable substitutes, "avoid the drafts" of cold air, and cold water too.

In the *Monthly* for last December, Mr. Huidekoper, of Meadville, Pa., makes some remarks on sulphur as applied to red spider, which, according to my experience is correct. A few years since, a lady in the neighborhood where I lived, gave me two Roses in pots that were completely covered with red spider,—there was not a healthy leaf on them. I was to kill or cure them. I placed them on a hot air flue, put a good quantity of sulphur under and around them, and covered each with a large flower-pot inverted over them; left them so for three days, examined them, expecting to find thousands of dead carcases, but not so: the 'varmints' were all alive, and no way troubled, but seemed to enjoy their condition. From this experiment, I am convinced, that though the fumes of sulphur are infallible as a remedy for mildew, they will not destroy Red-spider. The most effectual remedy will be found in frequent syringing with clean water, and any other way by which a moist atmosphere can be maintained. One pound of Whale-oil soap, dissolved in thirty quarts of water, applied with a syringe two or three times, will kill the Red-spider.

In growing grapes under glass, the *Thrip*, of which Mr. Huidekoper complains, can be very easily kept down by *frequently* fumigating with tobacco. It should be done every three or four weeks, commencing before the buds break, and continued until the fruit begins to color: burning the tobacco two nights in succession, which is safer than applying a dose strong enough to kill even half the number of insects, for such a dose will also kill the young leaves of the vines. Every gardener accustomed to growing the foreign grape, knows the necessity of this constant fumigation. The mistake of many is in letting the insect have his own way because he may sometimes happen to be weak in point of numbers, then he gathers strength and the legions are harder to kill than the few. In houses where, through neglect or otherwise they may have become very numerous, it will take more than one season—perhaps two or three—to completely destroy them; but my conviction is, that if the use of tobacco is *persevered in*, it will finally eradicate them from any house.

TALKS IN A [illegible].

Number [illegible]

BY L.

UNCLE J.—My dear John, I have just come in from an hour's work among my strawberries, and what do you think were my reflections while thus employed?

J. L. K.—I cannot say, but had you been among your favorite beans, you might have thought of Pythagoras, or perchance of the Fabii; or, had it been your peas you were hoeing, I would not have been surprised, from your penchant for the great old sages, you had thought of Cicero.

UNCLE J.—I see you are posted up; very well said! Now tell me how *you* came to think of these worthies?

J. L. K.—Why,—did not Pythagoras advise his pupils to avoid beans, though nobody to this day has discovered the reason; and would not the Fabii, the greatest of all the old Roman families, who boasted of a lineal descent from Hercules, and who existed for five centuries, filling nearly fifty consulships, besides naming among their tribe Dictators, Censors, etc., and one of whom, perhaps,

even saved Rome from Hannibal by his cautious manœuvering, "masterly inactivity," or Fabian policy, as termed at this day; would not, I say, the name of this most influential of the noble families of the commonwealth, have been written in English —Beans!

Uncle J.—Perhaps so—or Smith—what do you say to that? Faber means a smith. It also means ingenious, as a smith should be, and the latter is a more probable origin of the name of Fabius, though it has been ascribed to the still more ignoble bean. A family that could produce so many men of mark must have been endowed with great skill and force of character.

J. L. K.—Perhaps your philosophical acumen will, through this connection of faber, ingenious, with faba a bean, discover the origin of the beautiful phrase, "he don't know beans!"

Uncle J.—I might, and mayhap not be far away from the truth, though I do not remember to have seen such a comparison in any of our dictionaries. But I have seen, what does not seem more absurd and unreasonable, the assertion, that the young etymologists of some English schools have derived the classic word 'lam,' to beat or punish, from the latin 'lambo,' to lick—with the tongue! Would not your erudite teacher derive it from 'lambano,' the Greek for catch, convict, and attack, all most appropriate meanings, combined in one word?

J. L. K. [illegible] read that an astute Frenchman derived the word [illegible] from 'pilus,' the hair of the head!

Uncle J.—And do you not remember how mercilessly he was ridiculed by Porson, a wit, and a scholar of the first order, when he coolly traced the name of Jeremiah King, to its original Cucumber, —thus, Jeremiah King, Jeremy King, Jerry King, Jerking, Gherkin, Cucumber!

J. K. L.—Well, perhaps we have done as well in tracing the Fabii to their original beans, for that or some other plant we have all grown from; but Cicero was actually derived from a pea.

Uncle J.—Yes, it is said some old grandfather of his received the name because he wore a wart on his nose, like that upon the rugged phiz of Cromwell, and which *he* would have handed down to us, when he commanded the artist, saying, "paint me just as I am, warts and all." Cicer means a pea in the language of the old Romans, and there was such a tradition respecting the origin of Cicero's name; but who ever thinks that had that great orator and moralist been an Englishman, he would have been addressed as *Mark Tully Pease, Esq.!*

J. L. K.—Was it not the grandfather of Cicero who said that men in his day were like Syrian slaves, the more Greek they knew the greater knaves they were? I think if that is true now-days I had better stop my Greek, and stick only to the Latin, which I like much better.

Uncle J.—You need not fear your moral character will receive much detriment by the Greek, at the rate you progress. You have advanced as strong an argument for discontinuing the first-named language, as has been given for overlooking the last, that "a fool, unless he knows Latin, is never a a great fool," which is certainly very consoling to many minds, both within and without college! Should you disregard the opportunities now open to you for acquiring a knowledge of Greek and Latin, you will probably ever after have reason to regret your folly. They are invaluable and indispensable aids to education; and if you continue to study, as every young man should do, after leaving school, you will find a thousand occasions on which their value will be amply proved. It is the fashion of the day to advocate their neglect, and to proclaim the higher worth of science; but we are satisfied they should not be driven from their old home because a younger sister has been added to the family: a sister too which needs their help as well in her infancy, as she will continue to require it in all coming time. Not one of the natural and physical sciences but will be more easily mastered, and its nomenclature more readily learned and understood through a competent acquaintance with the old Greek and Latin, which some desire should really be, what in the strict sense of the term they never can become,—dead languages.

J. L. K.—I have been encouraged to persevere by hearing you say that a young naturalist, who has already acquired an extended reputation, found it necessary to take lessons in Greek, in order to facilitate his studies, by increasing his command of nomenclature, &c.

Uncle J.—My dear boy, considerations of utility are often falsely applied by many writers. We are told that the study of the classics offers the readiest way to a correct understanding of the English language, a truth, no doubt; and that the terms of science are more readily understood by those skilled in the languages from which they were derived. These are arguments drawn from utility, directly, while the most important consideration, the influence they exert in training the forming mind, is overlooked and ignored. This is really

the true purpose of their study, combined with those refining effects which attend an acquaintance with the literature of the ancients,—a literature not surpassed by that of any modern tongue. If we take as a guide the teaching of some modern popular writers, education will be reduced to a routine study of those facts and principles only which have a direct bearing upon what is called success in life, or which would enable us to subdue nature to the control of man. Such a course would degrade the 'coming man' to the low level of a mere laborer for a living,—a mere money-making machine, a tendency to which the age is already too prone. The refining and elevating influences of literature are now more than ever needed to counteract the strong material bias which scientific enquiry is giving to the cultivated minds of the age. Not such literature as you and I, and many others so deplore to see spread out before the swarms of boys and girls, to whom the shelves and tables of a certain popular Library seems to have been given over, whose masses of trashy and demoralizing novels (all novels are demoralizing since they enfeeble) must exert a baneful influence on readers so young and inexperienced. It is much to be regretted, that an institution which has heretofore held out such strong promise of usefulness, should so fail of its true object, and become a mere circulating library, where novels are the prevailing matter, to the exclusion of much that is really valuable,—a fount of poison, instead of a pure stream of knowledge and instruction. No doubt the daughters of the members obtain their new novels at much less expense to their papas than formerly; but it affords to thoughtful men but small satisfaction to know that they are obtained by drafts upon their purses, and that we, who once relished a quiet hours' reading or study,—a new book in hand,—can now seldom find either the quiet hour, the new book of real value, or even a seat not occupied by some young clerk, ostensibly a reader of books, but who is really sunning himself in some fair one's eyes. This growing nuisance calls loudly for abatement. To me it is another evidence of the unfitness of mercantile men to manage institutions of a literary character. A few cultivated minds may be found among them, but these cannot stem the tide that sets in favor of cheaper novels for the daughters of careful pennywise fathers, who are careless of the best interests of their sons and daughters; or, who through want of proper acquaintance with moral philosophy and sound principles of education, are not competent to select the reading which should be placed in the hands of the inexperienced. Sir Walter Scott would not permit his children to read any of his own novels, a class harmless in comparison with the vast majority of those now debasing the popular mind.

J. L. K.—I had almost forgotten that you asked me to imagine what your reflections were while employed over your strawberry-bed. I did not suppose you could have run so far away from your original topic, as to reach the Library, though I knew there were many weeds there that deserved as thorough eradication as any ever found in your garden.

Uncle J.—My dear nephew, while I must thank you for the patient and interested attention you have given to our conversation, I must postpone a recital of my reflections until another opportunity, and bid you in the meanwhile consider well what has already been discussed. Do not permit yourself to be carried away by the current of popular reading, which will leave no useful impressions upon your mind, will neither strengthen nor inform, but instead, will assuredly, if it is freely indulged in, weaken your understanding, unfit you for the reception of sound views of moral duty, and render you trifling and superficial. There is a wide and delightful field in which you may roam, and wherein you may find instruction without the risk of injury to your mind or your morals. Seek that literature especially which demands thought, and shun, the flashy, gossiping, [illegible]ted dishes of the novels and magazines of [illegible] Sound reading is needed to mai[illegible] in a healthy condition, as wholesome viands are required to sustain the strength and health of the physical man. Seek then, my dear nephew, by due regard to both your mental and material pabulum, that greatest of blessings, *mens sana in sano corpore.*

REMARKS ON THE HARDNESS OF SOME RARE EVERGREENS.

BY MR. HENRY SHAW, ST. LOUIS, MO.

The remarkably low temperature that occurred at the Missouri Botanical Gardens, St. Louis, and through the West generally, as far south as Mississippi, in the winter of 1863–64, was never known before. On the night of January 1st the thermometer sunk to 22° below zero. For the two previous days a boisterous wind had been blowing constantly from the Northwest. After January 1st the cold moderated very little, but remained for a whole week at from 6° to 18° below zero. Of course the damage to trees and shrubbery was my great and would have been more, had the previous year's

growth been well matured by a warm dry autumn, and a partial covering of snow.

The following were killed to the root:—Broussonetia papyrifera, Salix Babylonica, S. Babylonica curled-leaved, Bignonia grandiflora, Vitex agnus castus. Killed entirely:—Pinus tuberculata, 8 feet, P. Sabiniana, 5 feet, P. Lambertiana, 2 feet, P. Coulterii, 2 feet, P. laricio, 8 feet, all California trees; Abies morinda, A. pinsapo, Cedrus deodara, Thuja orientalis, large, Wellingtonia gigantea, 5 ft. Very much injured:—Peach trees, and many killed, no fruit; Cherry trees, many sorts injured and some killed, little fruit; Quince, many sorts injured and some killed, no fruit.

Grape vines, when left uncovered, were injured, or killed to the snow line. Catawba much injured; Isabella, same; Diana, Rebecca and Delaware, slightly, as also many other kinds; but Concord and Clinton were uninjured, and bore fruit as in usual seasons.

Pears and Apples suffered slightly, but bore some fruit,—of the former, Belle Lucrative and Easter Beurré abundantly.

Strawberries, being covered by snow, were productive of fruit, particularly Triomphe de Gand.

Raspberries, nearly all kinds imported, killed to ground, and little fruit.

Lawton Blackberries slightly injured, little fruit.

Morus alba and M. alba moretti many dead limbs and little fruit; M. rubra fruited as usual.

Conifers, [illegible] and killed:—Pinus maritima, P. excelsa (Bhotan), Cedrus Libanus, and C. Libanus Africanus, Thuja Lobbii, T. orientalis aurea, T. gigantea (Hookerii), Picea pectinata, Taxus baccata.

Magnolia grandiflora very much injured, even when trained to the east side of a 12 ft. brick wall. The following were much injured: tripetala, macrophylla, cordata, auriculata, glauca, conspicua, Soulangeana, spectabilis and purpurea.

Of Evergreen trees and shrubs that are considered rare and ornamental, it is a great pleasure to record the following as uninjured by the excessive cold of January 1st:—Pinus sylvestris, austriaca, strobus. mugho; Pumilio edulis (Cal.), Benthamina (Cal.), ponderosa (Cal.), Jeffreyii (Cal.), inops, resinosa, serotina, cembra; Abies excelsa, clanbrasiliana, nigra, pichta, Douglassii, Canadensis, and balsamea; Junipers, 15 sorts, all hardy, including Gossainthania, Cupressus Lawsoniana and ericoides,—others failed; Taxus adpressus and Canadensis,—others injured; Thuja occidentalis, plicata, Siberica, gigantea (U. S. Expedition), and Hovey's and Buist's varieties; Buxus arborea, 10 feet; Ilex opaca, 8 feet; Mahonia, Thujiopsis borealis, and Laurus regalis.

All the above endured 22° below zero, without protection, except what a slight covering of snow afforded.

FRUITS IN WISCONSIN.

BY F. PREUSSER, MILWAUKIE, WIS.

We are situated at 43° north, upon the western shore of Lake Michigan. In the summer the thermometer goes up sometimes to 100° in the shade, and in the winter it sometimes goes down to 26° below zero. The first of January, 1864, it went down to 32° below zero. For the first time in 24 years, I made metereological observations. A climate like this wants hardy and healthy varieties of fruit trees, shrubs and vines to live: and in a newly settled country, it takes time, experiments, and observations to find them out. Our experience is to select high situations for an orchard, and underdrain: on a high situation, exposed to the currents of air and wind, the wood will ripen sooner and be better prepared to withstand the cold of winter.

Of Apples, the following varieties will do well here, according to my own and the experience of my neighbors:—Caroline Red June, Red Astrachan, Sops of Wine, Sweet June, Fall Orange, Duchesse of Oldenburg, Keswick Codlin, Fall Wine, St. Lawrence, Ben Davis, Twenty Ounce, Yellow Bellflower, Tolman's Sweet, Northern Spy, Pomme Grise, Winter Winsap, American Golden Russet, Wagener. The Fourth of July Apple seems to be hardy, and did well the last two winters. You will find the three Canadian Apples, Pomme Grise, Fameuse and St. Lawrence in the list; but the three most reliable eastern apples, as Rhode Island Greening, Esopus Spitzenburg, and Baldwin are worthless here. I have cultivated about thirty varieties, but shall reduce them to eighteen or twenty.

In spite of the bad winter of 1864, I had the following varieties of Pears in bearing, and I think I may safely call them hardy:—Belle Lucrative, Winter Nelis, Tyson, Rousselet deStuttgard, Beurre d'Anjou, Seckel, Duchesse d'Angouleme, Buffam, a few Beurre Diel and Oswego Beurre. One tree of the Louise Bonne de Jersey, had about 2 dozen pears on the north side of the tree. There were more pears on the north side than the south side of the trees. I think the reason is the action of the sun on the wood and buds of the south side. The Fruit-growers' Association of Wisconsin recommends Early Bergamot and Flemish Beauty as the best for general cultivation in this State. Of Bergamot I know nothing; but of Flemish Beauty I had only a few pears on the lower branches, covered with snow during last winter, the trees suffered considerably. Of the 36 varieties I cultivate, I call the above hardy; the rest must have three to four years to recover again, because the fruit spurs are killed. Of Duchesse d'Angouleme I thinned out a few; but of Beurre d'Anjou over two-thirds, and of Tyson one-fourth of the young pears. The frost and ice certainly did not injure the buds of them.

Without fear of contradiction, I say, that the cultivation of dwarf Pear-orchards in this State is not profitable. Of about 120 Pear trees I have, a dozen are dwarfs, and they suffered most last winter: the quince is too tender, they will soon die, plant them as you will. Again, you find Pears doing well east, good for nothing here; for instance, the Andrews, of which Downing says, it never suffers by the blight, is the worst of all I have for that disease,—I lost three of the trees by blight, and the last one by the frost and ice of last winter; Lawrence, so much praised is neither hardy nor productive, you find a dozen pears on a tree that ought to have a bushel; Howell is another of the same kind.

In a former number of the *Gardener's Monthly*, you enquire if the Winter Nelis does not crack? All I have seen here are fine and good; the two varieties that crack are White Doyenne, and that poor thing for this climate, Passe Colmar. Seckel, Tyson, Beurre d'Anjou, and Rousselet de Stuttgard are remarkably exempt from the blight.

As Canadian Apples do so well here, perhaps Pears that do well in Canada might do well here. Will some of your Canadian correspondents be kind enough to give the names of Pears that do well in Canada, and bore last year?

If acceptable, I will give, in another communication, my experience and experiments on blight.

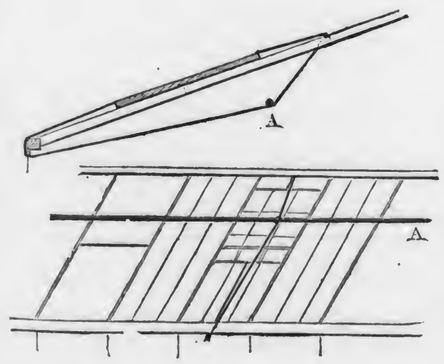
In regard to grapes, I will merely remark for the present, that the much puffed *Iona*, sent out by Dr. Grant, suffered by sun-scald last summer, in the grounds of my brother, the only one of twenty varieties in the same border.

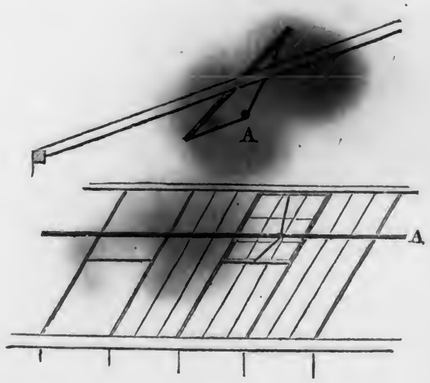
[Please write again.—E.]

OPENING SASHES.

BY F. N., BURLINGTON, N. J.

The plan of opening sashes, suggested by Mr. Zirngiebel in the last number of the *Monthly*, is a very interesting one. I have thought in times past of something of the same sort myself; but there seemed to me to be a difficulty in the way, which I do not understand to be obviated in Mr. Zirngiebel's plan. I refer to the chance of the sashes being lifted by sudden gusts of wind, which in our part of the country are very frequent.





In Mr. Z.'s plan, the sashes are kept down in their place by nothing but their own weight. When entirely opened, they could not, of course, go higher; but when only partially open, the wind, I should think, would lift them up and down suddenly, and be liable to break something.

I send you the following sketch of an idea which, I think, may be of use. It may not be better than the one sent by your Massachusetts correspondent, but it is at any rate 'another way,' and may do for a choice. It can be employed either for sliding sash or balance pivots. A simple roller is suspended about six inches or lower from the sash bars, and a cord once twisted around the bars

tightly, so as to prevent any chance of slipping, is fastened at each end to the top and bottom of the sash. A crank at the end of the roller turns it, and as the rope is shortened one end is correspondingly lengthened, the other allowing of opening, and yet preventing it opening more than one wants by wind or any cause, unless the roller goes with it.

This plan has been suggested by reading Mr. Zirngiebel's article. I have not tried it practically, but give it only as an idea which the readers of your magazine need accept at no more than it is worth.

HOW TO COOK THE HUBBARD SQUASH.

BY JAS. J. H. GREGORY, MARBLEHEAD, MASS.

I have been so busily occupied with my seeds and seed catalogue, that I have been compelled to appear somewhat uncourteous in neglecting to answer till so late a day, the question of that thrifty housewife,—not too late, however, to be of practical value this season, for the Hubbard is not so temporary a sojourner at our tables. I usually hold quite familiar intercourse with him till late in spring, and sometimes the year round.

But what is the use of discoursing on the cooking of a Hubbard Squash if you have'nt one worth cooking? Let us, then, first get the squash. For the first two or three years that the Hubbard was sold by provision dealers in this section, there was a great deal of [illegible] thrown into the market. Half of the squ[illegible] sold for table use should have been fed to the hogs. As I passed along Quincy market, and examined from time to time the barrels of Hubbards there on sale, I usually found about one-half the squashes were but half-grown. Now a Hubbard that is not fully matured, is usually very dry and fine-grained in the fall, and here will do very well for that season; but, if kept, it soon becomes watery and stringy. These half-grown squashes will usually be detected by their peculiarly dark green color, the absence of the characteristic shell, the straightness and greeness of the stems: should they have been but recently gathered, they will oftentimes shine as though just coated as with varnish. The squash, of medium size, weighing from 6 to 8 pounds, for our market basket, must be symmetrically shaped, having some elongation at both the stem and blossom end, as these are the richest parts of it. It must be of a dark green color, with the exception of a rich orange where it rests on the ground; the stem must have a very decided curve, the greater angle it makes with the neck the better; around the stem where it joins the neck, I prefer to see quite a depression, sufficient to make it possible to tie a small line without danger of its slipping. Our squash must weigh well in proportion to its size, as this will insure us that it is thick meated. Last of all, but first in importance, it must have a thick shell.

Hubbard Squashes, when crossed with the Marrow, make an excellent sort for fall use, being then as dry as the Hubbard, and usually sweeter; but as winter advances, they lose their good qualities, besides not keeping as well as the pure Hubbard.

There is a tendency among farmers to select only the very largest of the Hubbards for seed purposes,—this no doubt increases the weight of the yield, but it does so at the sacrifice of quality, as the public will ultimately learn.

Having obtained our squash, the next step is to open it. Away with the practice of some who endeavor to force through the shell the point of a sharp knife: should the knife slip, as often happens, then hands are apt to be at a discount. I reject, also, the practice of chopping the squash open with an axe, as the axe usually glances, somewhat to the danger of the feet, and to merely chipping out a piece of the squash. I reject, also, the practice of pounding the squash on a rock, as that is wasteful, breaking it into irregular fragments, and separating pieces of shell from the flesh,—besides, if the squash is held in the hands, when it cracks oftentimes the shell springs together, and the fingers, if above the line crack, sometimes get an ugly pinch.

My *modus operandi* is this: laying the squash conveniently before me, I strike a quick blow with a heavy knife, turn the squash a little, and hit a second and third blow; then taking it by both ends I strike it with some little violence, when it opens along the line of the blows. To divide it into pieces of convenient size for cooking, take a sharp knife and cut through the squash into the shell, then strike the piece violently against some hard object, and the shell will break along the line of the cut.

"I like the Hubbard," writes one correspondent, "but the trouble is with the shell; how do you get the shell off?" I don't get the shell off at all; on the contrary, I stand by the shell, and when my wife is preparing it for the table for her numerous family, I beg the privilege of having mine in the original package, the shell, that I may the better enjoy the firm, dry grain.

To get the good qualities of any squash, in the most concentrated form, it should be baked. About three-quarters of an hour in a hot oven will be found sufficient for this method of cooking. When baked, by all means bring it to table in the shell.

Never boil squash in water, always steam it. To do this, a simple perforated cover, of a size to fit about half-way down the boiler, will answer every purpose. The Hubbard will cook by steam in about twenty-five minutes; the Turban, (this is the richest of all fall squashes), requires about five minutes longer.

Before I close, allow me to introduce my squash loving friends to a very simple luxury,—a Squash Pudding: To a pint of sifted squash add two-thirds of a tea-cupful of sifted sugar, a tea-spoon even full of salt, and two soft crackers, pounded very fine; scald a quart of milk, and pour it boiling hot on the mixture; flavor with lemon and nutmeg, or with cinnamon; bake in a pudding dish, in a very hot oven two hours. Let it cool half an hour before bringing to the table.

THE EFFECTS OF SEVERE COLD ON THE PEACH & OTHER TENDER FRUIT TREES.

BY DR. JAS. WEED, MUSCATINE, IOWA.

One of our trees under protection, which should have been Haines' Early Red, proved to be an indifferent seedling. After gathering its crop of fruit last autumn, we cut off one of the larger branches, which showed three circles of sound healthy sapwood, the growths of 62-63-64; and the appearance of the dead wood of the inner circles indicated that it had been killed by repeated, perhaps annual injuries, the center being quite decayed, and the annual growth more sound towards the circumference. Cutting off a branch from a tree in the open grounds, which appeared to have received but slight injury from the past winter, having produced young shoots ten to fifteen inches in length, and those of the previous year being killed back only eight or ten inches, we found the current year's wood, about one-eighth of an inch in thickness, white, sound and healthy, and all of the previous annular growths blackened and dead. The inference was that the winter did, in fact, kill the tree all but the bark.

When, after the very extreme cold of last winter, its effects became apparent in the discoloration of the wood of the peach, and it was announced that the trees were killed, some contended that the blackened appearance of the wood was not necessarily a fatal indication, and that the trees in many instances would recover; but no one seemed to understand that the root and the bark being alive, the latter would be found in many instances to possess sufficient vitality to deposit a new growth of wood over otherwise dead trees: nor have we heretofore understood that when the winters have "killed the young wood" of trees, that it has often, in fact, been killed over the whole tree, quite down to the root.

A temperature of 16° below zero in December, has slightly colored, and we presume, killed the wood of last year's growth; but the vitality of the bark will probably deposit another growth over it the coming summer, when the trees, to casual observation, will appear sound and healthy.

If it is true, that the annual growth, or new wood of the past season, is liable to be repeatedly or annually killed immediately under the bark over the entire tree to the ground, by *severe cold*, in the Peach, Apricot, Plum, and the Heart and Duke Cherries; the fact is of much importance, and should be recognized in the culture and management of these trees.

FAMILIAR BIRDS.

BY J. P. NORRIS.

II.—THE BLUE-BIRD.

The subject of our last article was the House-Wren, but the one that we now present resembles that pugnacious bird in no respect,—it is the Blue-Bird (*Sialia sialis*). Who does not know this charming little songster? His attractive plumage, his gentle, winning ways, and last; but not least, his great hostility to insects, make him deservedly a favorite.

Perhaps we could select no two [illegible] more different from each other in disposition than the House-Wren and the Blue-Bird. The former is quarrelsome and domineering, so much so, indeed, that two pairs cannot live near each other; but what a contrast the latter forms to him—quiet, inoffensive, peaceful, and loving to each other.

The Blue-Bird is the harbinger of spring. This alone would be quite sufficient to entitle him to a warm welcome. He makes his arrival known to us by his soft and agreeable warble, which seems to tell us of green grass, balmy air and fruits and flowers which he has left behind him, forsaking all these attractions to return to his old and well-loved haunts, to tell us of approaching spring.

Having paid his respects to, and chosen his wife, they are both to be seen visiting their former nest, and beginning to clear it of the rubbish which has accumulated there during the winter. Now their labors commence. No rest for either until their nest is completed; but toil, toil. Frequently while both are absent procuring materials, the mischievous House-Wren takes the opportunity of pulling

all the results of their labor to pieces, and scattering it to the winds, always taking good care, however, not to be within sight at the return of the rightful owners. But the Blue-bird, with charming amiability, sets to work to repair the damage done, making no retaliation, but, perhaps, guarding more carefully in future its nest.

At last it is finished, and his mate has laid her her little blue treasures in it, and sits brooding over them with zealous care. Now the male bird exerts himself to cheer her during her arduous duties, and now he brings her some delicate morsel—some choice larvæ or insect. Truly it is a labor of love! Two weeks' patient sitting have accomplished wonders. Behold! six little naked birds claim all their care and attention. No rest for them now. Six hungry little mouths must be fed, and we would not like to have to keep an account of the number of insects that are destroyed to do this.

Two weeks more have passed by, and the young nestlings are assuming a blue coat like their parents, with a charming red waistcoat. How comical they look with their little short tails and opened mouths, crying, "more food, more food!" A few days more, and they have taken their first flying lesson. What twitterings and timid little flights are to be heard and seen now! They have at last reached their full size. and now rove around with their parents: and woe to any insects that cross their path!

In conclu[illegible] would say to all who value fine fruit, beautiful flowers, green grass, and trees not devoured by caterpillars, protect the Blue-Bird, he is your best friend. Listen to what Wilson says of him:

"When winter's cold tempests and snows are no more,
Green meadows and brown furrow'd fields reappearing,
The fishermen hauling their skiff to the shore,
And cloud-cleaving geese to the lakes are a-steering;
When first the lone butterfly flits on the wing:
When red glow the Maples, so fresh and so pleasing,
O then comes the Blue-bird, the HERALD OF SPRING!
And hails with his warblings the charms of the season.

Then loud-piping frogs make the marshes to ring;
Then warm glows the sunshine, and fine is the weather;
The blue woodland flowers, just beginning to spring,
And spicewood and sassafras budding together:
Oh then to your gardens ye housewives repair!
Your walks border up; sow and plant at your leisure;
The Blue-bird will chant from his box such an air,
That all your hard toils will seem truly a pleasure

He flits through the orchard, he visits each tree,
The red-flowering peach, and the apple's sweet blossoms;
He snaps up *destroyers* wherever they be,
And seizes the caitiffs that lurk in their blossoms;
He drags the vile *grub* from the corn he devours;
The worms from their webs, where they riot and welter;
His song and his services freely are ours,
And all that he asks, is in summer a shelter.

The plowman is pleased when he gleans in his train,
Now searching the furrows,—now mounting to cheer him;
The gardener delights in his sweet simple strain,
And leans on his spade to survey and to hear him;
The slow ling'ring schoolboys forget they'll be chid,
While gazing intent as he warbles before 'em,
In mantle of sky-blue, and bosom so red,
That each little loiterer seems to adore him.

When all the gay scenes of the summer are o'er,
And autumn slow enters so silent and sallow,
And millions of warblers that charmed us before,
Have fled in the train of the sun-seeking swallow,
The Blue-bird, forsaken, yet true to his home,
Still lingers, and looks for a milder to-morrow;
Till forced by the horrors of winter to roam,
He sings his adieu in a lone note of sorrow.

While spring's lovely season; serene, dewy, warm,
The green face of the earth, and the pure blue of heav'n,
Or love's native music have influence to charm,
Or sympathy's glow to our feelings are given;
Still dear to each bosom the Blue-bird shall be;
His voice like the thrillings of hope, is a treasure;
For, through bleakest storms if a calm he but see,
He comes to remind us of sunshine and pleasure!"

ZINC LABELS.

BY HORTICOLA.

It is a general complaint among pomologists, that the *labels* in use are all of them more or less imperfect. Wood is perishable; lead, slate, gutta percha, etc., have their several advantages, but they are counterbalanced by imperfections peculiar to each of them. At last the French chemist *Braionnot* made the recipe of an indelible ink, known to write on zinc. It consists of one part of crystallized verdigris, one part of sal ammoniac, and half a part of lamp-black, thoroughly mixed and pulverized. To this powder must be added ten parts (by weight) of distilled or rain water. It is the ink recommended in pomological books and journals. Sometimes the direction is given to keep the bottle always inverted, in order to prevent the ammonia from escaping. Any one who understands the alphabet of chemistry, knows that this is poor advice, based on ignorance; there is no gas in the mixture ready to escape.

Dr. Rudolph Boettger, of Frankfort, of gin cotton notoriety, (Boettger and Schoenbein), was the first in Germany that called the attention of nurserymen and pomologists to it, in his contributions to Natural Philosophy, vol. i. pages 36 and 37.

This took place as early as 1837. In vol. ii. of the same work, pages 36 and 37, the author shows that lamp-black is of no use whatever in the mixture; it ought, therefore, to be omitted, being unfit to be incorporated in it, and having nothing to do with the color of the ink. This was in 1841.

It is true that the ink is indelible, but it is gray instead of black. It requires, besides, if not much at least *some* skill in chemical manipulations, and a mortar for trituration; it is also somewhat expensive.

Being very fond of both Natural Philosophy and Chemistry, I was, a number of years ago, engaged in some galvanoplastic experiments, when I had occasion to prepare Braionnot's ink. I disliked its color; and, after some reflection on the cause of its action on the zinc, I concluded to try solutions of other salts of copper, and it was natural that I should dip my pen immediately in the solution of sulphate of copper used for my galvanoplastic experiments. Those conversant with such experiments, will know that the solution contained a small quantity of free sulphuric acid. I was not a little astonished to behold the jet black color of the letters written with it. After it was dry, I soaked the piece of zinc for twenty-four hours in water; I kept it for three hours in boiling water, and exposed it to the action of a violent rain and snow storm, then raging; I then gave it to some boys to rub it out with a piece of flannel. *It proved to be entirely indelible.*

Without losing any time, I ascertained by numerous experiments, the best proportions of the ingredients of the ink, and the way to use it. In communicating it to the readers of the *Monthly*, I have to contribute a little to the element of the vexed question of the best method to label trees, shrubs, etc.

1. *Preparation of the Ink.*—Dissolve one part of blue vitriol (sulphate of copper) in ten parts of rain water, by mixing them in a common vial and shaking them occasionally. One or two drops of sulphuric acid may be added, but this is not absolutely necessary. Use *a goose-quill*, not a steel-pen, for writing.

2. *Preparation of the zinc.*—Take thin sheet zinc, and make superficial cuts in it with a broken or shoemaker's knife, against a ruler or a piece of lath or board, to get the cuts straight. By bending the zinc it breaks very easily and smoothly along the cut or scratch. Divide the pieces so obtained into as many labels as you may wish.

The zinc pieces must then be scoured with some fine sand and water. It facilitates the operation if a little salt, vinegar, or muriatic acid is added to the water. Muriatic acid is best in the proportion of one part of it to three parts of water. When bright, put them in rain water, and leave them there till wanted. Rub them dry with a piece of cloth, and write upon them with a quill-pen, as directed. When dry, fasten them to the trees. After a few days, the names so written will be covered with a white powder; moisten your finger and remove it. The writing will last as long as the zinc itself.

Not long ago, I read, in the celebrated "Monthly for Pomology," by Overdieck and Lucas, that leather is the best material for fastening any kind of labels to trees. Such leather strips are already for sale in the seed stores of Germany. I hope to soon see them introduced here, for Mr. Lucas, who takes at present the lead among the German scientific pomologists, pronounces them much superior to wire, for reasons that I need not explain to your readers.

NOTES ON CAMELLIAS.

BY MR. PETER MACKENZIE, PHILADELPHIA.

The April number of your *Monthly* is before me, and I perceive, from your notice of the display at the Horticultural Society, of Feb. 21st., that we obtained the premium for the best Camellias, which was all right; but, you also state, that we gained the premium for the best collection of *cut flowers*, but they were *unnamed*, as the design of the premium offered intended the collection should be,—for the public information. Now, on that occasion there was no premium offered for a collection; and we took them there to help the attraction only. Besides, if you had looked close, you would have found the principal kinds in that collection *named:* but the flowers being large, the little bits of paper with pencil marks were rather hidden by their being close together.

The March exhibition will no doubt make amends for the former, as there were *sixty-five* distinct kinds, *named correctly.*

When the *new kinds* of Camellias become as plentiful as the *old*,—when we can cut and come again,—then the old kinds must back out. I could name 6 kinds that, if they could only be got in bloom when wanted, whould eclipse any 6 of the old kinds in cultivation. For instance, the world-renowned old Double White, or any other white in cultivation, in my opinion, is excelled by *Dunlap's White.* The only fault of that variety is, that it runs right up without branching much, and generally has a straggling appearance; it is also a shy bloomer.

As a light striped variety, having all the properties of a fine flower, I would put my own *Jenny Lind* against any of the same color, it having stood the test of European shows for ten years.

As a splendid deep rose-colored variety, show me an equal to *A. J. Downing.* There is also Wilderii, Mrs. Abby Wilder, Mrs. Lurman, Mrs. Cope, Feast's Perfection, and a number of others, all you must observe are *American seedlings.*

Now we have no occasion to go to Europe for kinds to excel the old ones, as we have plenty at home; and, as I said before, when they become as plentiful as the old kinds, they will take their place.

The Gardener's Monthly.

PHILADELPHIA, MAY, 1865.

☞ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

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HOW TO MAKE THICK OSAGE ORANGE HEDGES.

It is very well known that the only difficulty about making good live fences is, that the tendency to grow thick at top and thin at bottom, is too strong to control without much labor and more skill. The whole object of intelligent trimming is to reverse this nature of things. The hedge is trimmed severely towards the top in June, just after the young shoots have grown, and before they have become woody, which somewhat weakens the upward growth; while the side shoots are encouraged to grow as strong as possible, without any, or with little trimming until the fall of the leaf, when pruning rather strengthens than weakens the subsequent vegetation.

While travelling westward recently, we met an intelligent western farmer who had found live fences "no humbug," but rather an invaluable blessing to the Prairie man. He spoke of his hedges, and those of his neighbors, who mostly followed his plan, as so thick and compact that a starved hog would hardly dare attempt to break through to a good feed of corn on the other side. He told us his plan. We have never seen any done after his system, but it is so reasonable, that we have full faith in the plan, and are sure our readers will find it to their interest to try what merit there may be in it.

The mode consists in nothing but this:—The hedge of course is cut down pretty low when first planted, and it shoots up, perhaps, two or three feet the first season. These are cut down to about nine inches the following winter; and the following spring they push forth numerously, and with great vigor. About June or July they are cut square off about eighteen or twenty inches from the ground, and the prunings raked up and placed along *on the middle of the squared top, along the whole line of the hedge.* Here they in time wither and die, and of course shade the leaves and buds immediately beneath, which weakens their strong upward tendency more than the pruning of the green shoots would do; and the shoots turn, as it is well known they will do, to the strongest points of light, which in this case will be the sides. *The whole course of the shoots will be in fact towards the sides,* just where we find the usual difficulty is to make them grow.

He did not explain to us in this way how the plan operated: the explanation is our own. All he vouched for was, that the hedges so treated were thick and bushy at the bottom, just where thick and bushy branches are most desirable to be,—and it is so much in accordance with what we know to be the result in similar cases, that, simple as the idea is, we felt we had gained a great amount of valuable information for our diary of that single day.

The square form of trimming is not continued beyond the first year's time,—after that the hedge is gradually reduced to a sort of conical shape; but the trimmings are laid on for some years afterwards.

CONTINUED CREATION OF SPECIES.

When we say of an old proverb or phrase that it it is 'trite,' we do so disparagingly. We do not mind how often we hear a truth, but we like it told in a new way. We laugh at those who continually go about to see or hear of some new thing; but we ourselves tire of our old dress, and long for the unusual or the new. Yet there be a few 'old saws,' as of some old practices, on which we cannot improve. Like the good firm shake of a dear old friend's hand, they always come to us with the same warm thrill, and we would not see them change, or on any account pass away.

And so we feel when we ask the student of Nature to "Look from nature up to nature's God!" Expressive,—and well expressed there is a sermon in the sentence,—and in the sentence a long chapter, which the heaviest dissertation would not make more clear.

If there be a pleasure in this sublime contemplation, the horticulturist is of a truth one of the most favored of mortals. The relation between cause and effect he is compelled by the nature of his avocations, to continually investigate; and how, when, and why all the beautiful forms by which he is surrounded came to exist, cannot but frequently have thrust itself on the curiosity of the most casual admirer of vegetable forms.

One of the most beautiful discoveries of modern times is, that of the probability that every thing on or about the earth is, and always has been, governed by general laws; and that every law that ever had any influence on making our earth what it is still exists and is in operation.

There is no more impropriety in supposing that the sovereign Creator of all things should provide for the creation of species by general laws, than that general laws should be appointed for their preservation, reproduction and final decay.

That new species are continually appearing on the face of the earth, is very nearly now a settled truth. It seems almost a necessity that it should be so. So many changes are occurring on the face of the earth by the progress of geological and other accidents, and by the various operations of man, that among plants species would continually become extinct; and in process of time the number of the beautiful forms that clothe surface of the earth would continually diminish. But the contrary seems to be the fact. As civilization progresses, and agriculture clears the ground of many of its fairest flowers for the more useful cereal crops, the list of species known to the botanists rather increases, and this too seemingly in proportion to the thickness with which population settles on the land. We scarcely ever take up an English scientific work but we find an account of some new species of plant discovered, though for the last couple of hundred of years thousands of Botanists have ransacked almost every square foot of its comparatively, to an American, insignificant surface. Many plants, like *Dianthus prolifera* and others, that once existed there have disappeared, and yet the list of plants catalogued as belonging to England is greater than ever, and still increasing. It was at one time supposed that these new plants had simply been overlooked; but that explanation is no longer satisfactory.

We all know that varieties are continually being introduced or created, and in many instances we know the general laws that produce them; but it is contended that varieties are not species, and that the collections of individuals, or varieties of individuals we call species, cannot change. Yet, if they can cease to exist, as fossil remains tell us they do cease, by general law; and as individuals of the species cease, why may they not come into existence by general law, as individuals or varieties do? Indeed, is it not the same law which produces species as produces variety? and is not a variety merely an indistinct and less decided effect of still the one general law? Nature never produces all alike. When in operation for individual production, she makes some weak specimens, and some very decided ones,—and in the production of new forms she may be expected to bring forth some so specially characteristic, that all botanists will say at once "that is a species;" others so weakly distinct from her former productions that no two botanists may agree how to place them.

We are moved to these considerations by the discovery on the Schuylkill of a singular fern, by Mr. R. Robinson Scott, of Port Kennedy. It is far more distinct from any other fern than many duly acknowledged species are. A little of *Asplenium Ebenum* may be traced in it, also a little of *Asplenium pinnatifidum;* but these divided likenesses can be traced in all plants. *Asplenium pinnatifidum* is more like *Camptosorus rhizophllus* than this fern is like either of the two above-named. Is it a variety, or a newly created species? The question is puzzling our local botanists. As we believe only one plant has been found, it is probably a new creation. In the best herbariums no similar form can be discovered.

We know by cultivation in greenhouses, varieties of ferns reproduce themselves perfectly from seed; why should they not in a natural state? If Mr. Scott had not transplanted this fern to cultivation, we have not the slightest doubt it would have scattered its spores around, and in time a goodly 'locality' for the fern have been obtained; and, perhaps, all things favoring, it might have spread to a wide circle. Other plants, even quite near, have a very local habitation. *Asplenium pinnatifidum* grows within a few miles of where it was found, but does not cover a space of more than a few hundred square yards. May not that have originated there, from a single plant, not so very many years ago, as has done Mr. Scott's? May it not, *most probably* have done so? And if these very distinct specific forms have appeared at different times, and nearly in our own day, why may not hundreds of more have done so in times past?

Our Cypress (*Taxodium distichum*), and Sweet Gum (*Liquidambar styraciflua*), once grew in England abundantly, all over her soil: but now are there no more. Thousands of forms besides once existed there, that now have disappeared for ever from the earth; but there are no lack of species, nor will there be so long as earth shall endure.

So also in our own country, the fossils of our under surface are very different from plants we have above,—and on the upper surface, the old monarchs of the forest are gradually wearing away. The great mammoth tree of California seems to produce few Seedlings in its own districts that live to a "tree's estate;" and the seedlings we raise here in the east, are liable to a disease which leaves very

few to grow. Its race will soon be run, with but a few fossils, and engraved illustrations in the *Monthly* to tell the tale of its wonderful size. The Buttonwood also, remains diseased, and no doubt will go as species before have done, though perhaps many years may be necessary to compass its end. And so shall it be with all.

We think Knight not very far wrong in his theory about the wearing out of varieties of fruit; because we think varieties and species not materially distinct, and no doubt the same rule that governs one governs both. Varieties and species, like towns, nations and individuals, have their periods of rise, progress and decay. As one disappears, another rises on the ruins,—all in accordance with the Divine law, and all worthy of man's heartfelt gratitude and highest admiration.

NATURAL SPORTS.

There are few things more curious in Horticulture than the occasional variations of a shoot or branch from the regular character of the parent plant. If these shoots are cut off and induced to send out roots of their own; or, if buds or grafts be taken from them, and secured to something else, they retain all their peculiarities, and become as truly a new variety as if obtained from seed.

Some grapes sport remarkably this way. There are already many grapes called Isabella, which are very distinct from one another, which it is pretty well known have not been obtained from seeds, but which, from long cultivation in certain soils, or under some peculiarities of climate or situation, have departed from their original form; and which have been fixed by propagation, and are, to all intents and purposes, as distinct as if they were seedlings.

The Nectarine is a very familiar instance of sporting in a fruit. The first nectarine was undoubtedly a mere shoot from a peach tree, yet its appearance and flavor are as truly distinct from the peach, as if it were a distinct species; and, most probably, were it found in a wild state, it would be considered a true species.

Among flowers also there have been curious sports. Variegated-leaved varieties of plants frequently show their variegated character from their seedling state; but usually they are mere sports of plain-leaved plants,—which sporting branches have been cut off and rooted, thus fixing the variegated character on a distinct plant.

In the Rose sports are common. The old Red Moss Rose frequently returns to a common Provence Rose without any mossiness on the buds, and is, therefore, most probably but a sport from it originally. The Fine French rose Madame Desire Geraud, is a sport, (from La Reine, we believe; but at any rate a sport), and the new Rose, advertised by Mr. Buchanan, in this number,—the Catharine Sprunt,—is not a seedling from, but a sport of Saffrano, which originated some years ago in the garden of the Rev. James Sprunt, of Kenansville, North Carolina, a rare lover of Roses, and a keen observer of all their peculiarities. He discovered a branch on his Saffrano Rose that, instead of the usual orange tint of Saffrano, had flowers of a pure canary yellow. He propagated from this branch, and the truly valuable variety "Catharine Sprunt," as we saw it with the raiser, is the result.

We think 'sports,' both in fruits and flowers, are much more common than they are generally supposed to be; but much is lost by want of observers, or of observers failing to propagate and fix the peculiarities. The subject is worthy of attention,—both for the interest attached to it as a probable source of improved varieties, and as affording a curious topic for physiological speculation.

A CHEAP STRAWBERRY BASKET.

The *Gardener's Monthly* called attention a few years ago to the importance of inventing a cheap Strawberry box or basket, that purchasers could take away with the fruit without any great loss to the fruit-grower. Since that time great attention has been given to the subject, and we have figured several very good inventions by different men.

The accompanying plan seems to us to be an excellent improvement. It is the invention of Mr. J. Chambers, of Burlington, N. J., himself a large Strawberry grower, and therefore well qualified to judge of the wants of the strawberry men.

The principal feature, next to cheapness, is the ease with which the boxes can be taken apart, so as to occupy a small space for transportation; no less than the facility with which the parts can be put together for use when wanted.

When we first directed attention to the want of articles of this kind, we never dreamed that the idea could be so nearly perfected as as it has been,—and we take a peculiar pleasure in recording them, not for any purpose of glorifying the *Monthly* for suggesting a good idea, but for the satisfaction of our friends who are glad to feel that our labors are not altogether in vain.

In explanation of the engravings, we may state that Fig. 1 is one piece of some pliable wood, with slits cut for the insertion of the bottom, and also

for the purpose of fastening the ends together by the means of a notch, and which, by having the corners scored, readily forms a square, as shown in

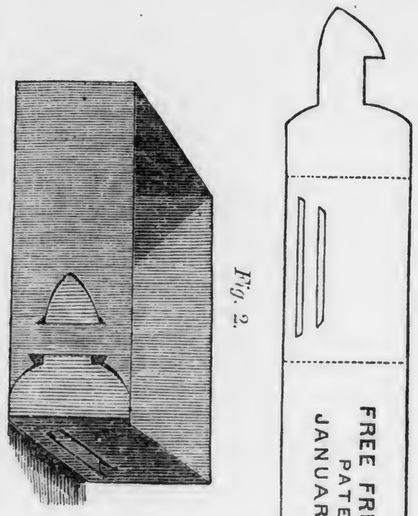

Fig. 2.

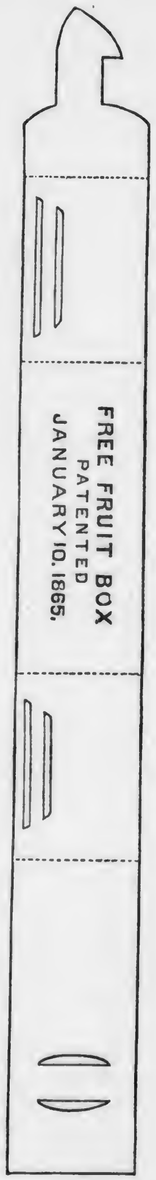

Fig. 1.

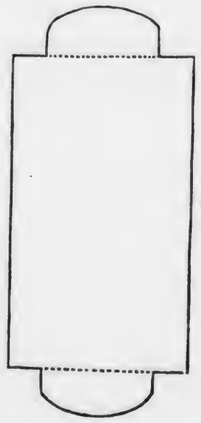

Fig. 3.

Fig. 2. The bottom, Fig. 3, is also one piece, with the notches scored, which by lodging on the slit makes it perfectly firm.

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.

WHEAT TURNING TO CHESS.—A correspondent from Paris, C. W., writes:—"I am in hope that the wheat turning to chess question will be decided now; all I can say is, it has puzzled me many a day, for we see it come up here wild, on the plains, long before they were touched by the axe or plow, and then we see it again in the plowed field where the wheat has seeded itself, or has been winter killed; but I will say, that as the land becomes older or more worked, we see less chess, not because wheat winter kills less than it did in the new land, but I think because farmers sow less chess. I am sure it was in the ground on the plains here, because, if you broke up new plains and did not sow any thing on it, and let it be for a year or two, chess would come up, especially around the low places, I do not mean marshy.

GREEN RIVER COUNTRY, KENTUCKY.—A correspondent from Calhoun, McLean Co., Kentucky, writes:—"Can you not induce some of the fruit growers of your State or vicinity to come to (this) the Green River country, and go into the culture of fruit for profit? Last fall, apples sold here at gathering time at $1 per bushel, and cider at from 40 to 75 cents per gallon; of other fruits there were none to sell. There are some very good locations in this country for the growth of nearly all kinds of fruit."

MATING OF BIRDS.—"*Juvenis*" writes:—"I read the notice of "Familiar Birds," by Mr. J. P. Norris, with more interest than I know how to express. I am somewhat of a young observer, and the little I have learned of the feathered songsters, makes me only desire to know more. There is one point on which I am often puzzled, and probably Mr. Norris, can help me. All writers I have met with so far, speak of birds choosing new mates every year; and I well remember being told, when an inquisitive little boy, that Valentine's day was so called from the little birds choosing their mates for the season on that day, though I could not see the connection of the name with them. In a Lilac bush near my window, a pair of cat-birds build every year: I am nearly sure it is the same pair every year. My query is this: Do birds really

choose new partners every year? or do they mate for life?"

Striking Camellias—*C. N. D., Jamaica, L. I.*—In the first volume of the *Monthly*, I recollect seeing a hint on striking Evergreens in July, in heat. I expect to have wood for a thousand cuttings of the single red Camellia. Can I strike them from single eyes in gentle bottom heat about the midle of July, in seed pans or pots? or would it be the better plan to take two eyes to a cutting, and keep them in a close, cool and shady frame?

[Single eyes do very well for Camellia cuttings; but they are not to be set so low down as grape eyes, nor cut so near the eye. The usual plan is to cut off the shoot just above every eye, leaving the whole space between each eye to form the base of the cutting. Cuttings of two eyes are very seldom made. They are struck most easily in June or July, in hotbeds of manure, or of hot-water, or in any way that a *bottom* heat of about 70° or 80° can be kept up. They are to be kept close for a while, by sash, and partially shaded, to check evaporation, until new roots push to supply the waste, when they may have more light and air.]

Protecting Glass from Hailstones—*A. D., Weston, Mo.*—How do horticulturists protect their glass structures from hailstones? and what is the best protector?

[Some years ago, experimenting for a certain object, we built a greenhouse with sash-bars fifteen inches apart, using glass of that size. Very thin glass was also employed: not 1-32 of an inch thick. A few years afterwards, one of the severest hail storms ever known here came on. The hail stones many of them as large as plums. The writer went into the house, and sat under the stage, with the expectation of "seeing the end of the house." To his surprise, not half a dozen squares were broken in the house 22x50 feet. The thin and large squares imparted an elasticity, which broke the force of the hailstones. In the vicinity, thousands of small and stiff squares were broken.

But, in after years, a difficulty occurred with the the large glass on *flat-roofed* houses. The weight of snow broke many through the middle; also, in heavy wind storms, where the houses are not very solidly and heavily built, much large glass will be broken by twisting, where small glass would escape.

Our experience is, that with a *steep pitch* to the house, and a house very *firmly and strongly built*, large thin glass is the best protection; but as all this costs extra to do, we are not sure whether, in the long run, it is not best to build in the usual way and insure in some company against loss from hail.]

Bouquet Making—*J. G. B., Fishkill, N. Y.*—A few occasional remarks on Bouquet work would be hailed with delight, and read with much interest by your readers. Perhaps some of our florists would be kind enough to furnish some remarks on the subject for the benefit of the friends of the *Monthly*.

[The modern way to make bouquets is to take the flowers separately from their stems, and fasten them to any slender and pliable sticks,—pieces of old corn-brooms preferred. Camellias and heavier flowers have slender wires run through them to form stems. Fewer flowers are consumed by this plan, and the plants are not so much injured by cutting. They do not last quite as long as if every flower had full length natural stems; but with an occasional sprinkling of the bouquets with water there is not much difference. Besides, these pliable stems allow of better forms for the bouquet. They are fixed round a central stick, with fine string, to form the bouquet; and, as the flowers are being put in, a stuffing of cedar or ground pine tied in, to give the bouquet a full form. A five minute's lesson from a bouquet maker, or pulling an old bouquet carefully to pieces, would do more to make all clear, than an hour's reading.]

Dahlias from Seed—*E. G., Nora Springs, Iowa.*—I sent East last year for various kinds of flower seeds, but the Dahlias, which I received for very fine mixed kinds, proved very common yellow ones. I would like to know how to get reliable seed?

[The Dahlia, in its natural state, is a very poor thing, not much better than a wild ox-eye daisy, and is very difficult to improve. The one or two hundred named kinds found in nursery lists, are probably selections from as many *hundred thousand* seedlings. Seeds saved from first-class flowers may produce, perhaps, not one better to the hundred than the original; perhaps a dozen merely good ones; a couple of dozen 'tolerable' only, and the balance but material for the manure heap. When a good one is once obtained, it is perpetuated by dividing the roots, or by otherwise increasing the individual plant.]

Best New Currant—*P. H. B., Aurora, Ills.*—A peddler in this section has been selling extensively this season, the Cherry as the best "new Currant." This sour old thing of course is not of this character; yet, for the satisfaction of some of my neighbors, I should be glad if you will name what, in your estimation, is the best.

[There are a few new Currants, such as Dana's and others, that are undoubtedly superior to old ones; but of those better known, and extensively tried, the Versailles is the best. The berries are as large as the Cherry, the bunches double the length, and the flavor and general quality equal to the old Red Dutch.

Name of an Apple.—In our report of the Fruit Growers' Society of Eastern Pennsylvania, the wicked types make Mr. Conklin's new apple the "*Dulcinea del tobosa*," instead of *Dulce dommum*. We suppose the types must have been used to an edition of Don Quixote, and took the apple for the great favorite of the celebrated Knight of La Mancha.

After all, it is well if no greater disaster happen to this new fruit; for, alas! too many now-a-days are like the fair Dulcinea; to their own champion Knights beautiful princesses; but to more matter of fact Sancho's, prove but ugly country wenches.

Buckingham Apple.—*S. M. Buckingham, Poughkeepsie, N. Y.*, wishes to ascertain who has the Buckingham Apple described on page 249 of our volume for 1861. Can any of our readers oblige us with a reply?

Best Cider Apples—*O. S., Winooski, Vt.*—What *one* or *two* sorts of Cider Apples would be most likely to prove best adapted to this northern section of country, for hardiness, good keeping and great bearing qualities, with flavor for cider; possessing the best qualities, such as Carthouse, Butter Apple, Harrison, Winesap.

Please say what one or two sorts of Crab Apples expressly for cider would likely stand highest for this section, taking into account these qualities: such as Fry's Crab, Hewe's Virginia Crab, Hagloe Crab, Waugh's Crab.

No cider varieties having been tried here, we propose to graft and bud of the best of these sorts.

[Those named by our correspondent are still among the most popular varieties grown. In northern New Jersey, the Harrison is particularly in use. In Pennsylvania, the Smith's Cider is the most popular of all: but is probably for its great hardiness, certainty of bearing, and the abundance of fruit and juice; for the quality of cider is not first-class.

If any of our readers know of any local varieties that have been found superior to any of those named, we should be obliged by the information.]

List of Nurserymen and Periodicals—*O. P., Burlington, Vt.*—Until this year, I have not been a subscriber to the *Monthly* since 1860. Have there been any lists of nurserymen or agricultural publications of the United States since that time? If so, in which volume or numbers?

[We have not published any since. Cut off from knowing what Southern nurseries or magazines still existed; and with so many Northern nurseries or papers ceasing to exist, or probably in difficulty, any list we could give would be but of temporary utility, and very imperfect at that.]

Propagating Scented Verbenas—*J. G. B., Fishkill, N. Y.*—How can fragrant Geraniums be propagated most successfully?

[Apple-scented Geraniums are probably intended, as the Rose-scented and other shrubby kinds are easily raised from cuttings. Apple Geraniums are raised both from seeds and from root cuttings. The plants for seed are set on a dry sunny shelf in a greenhouse, where they perfect seed abundantly during summer. The seed is sown as soon as it ripens, and makes good plants by next spring.]

Root-cuttings are made from pieces of strong roots, cut to lengths of half an inch, any time during the winter, and put in a bottom heat of about 55° or 65°.

Double Portulaccas—*P. D. McK., Chatham, C. W.*—Can you inform me why my Double Portulaccas produced no seed last year. They bloomed profusely, but failed to yield any seed. There must be some means of obtaining seed, and I would like to get the secret?

[Not more than one-fourth come double in the best of cases from seed. When semi-doubles seed, they can be perpetuated by cuttings taken off in August.]

Grape Discussion.—We have received several articles on this subject, which we cannot insert. The writers evidently mistake the object we have had in view in what we have already published. We have never admitted into our magazine personal attacks on any man, nor on any man's business. We have always contended, and repeatedly expressed the opinion in these pages, that if a man conducts his business dishonestly, a court of law, and not a public journal, is the proper place to examine the charge. The articles we now refer to, and

which we decline to publish, though evidently truthfully written, are but personal attacks.

It is our duty, "without fear or favor," to guard the public against mistaking a *manufactured public opinion*, as to the merits of new seedling fruits, for a *real* and *spontaneous* expression of the public mind. Our course in a recent case had this object, and no more; and was forced on us, by a sense of duty, through what we saw and heard at Rochester. That we were right, the subsequent action of the Greeley Committee, and after circumstances, have fully proved.

We have endeavored to keep all personal questions, not legitimately within our sphere as public journalists, completely out of the case,—and believe we have fully succeeded, as we have heard no complaints on this score from any quarter.

We make these remarks in connection with these rejected papers, that our correspondents may save themselves the trouble, and us the pain, of declining them.

Vineland Floral Society.—*Miss Jennie B. Lyford, Vineland, N. J.*, writes, that in connection with several other ladies, she is endeavoring to improve the floral taste of that section, so that "every house will be covered with vines, and every yard fragrant with the breath of flowers." She will thankfully accept any surplus flowers that may be sent to her, to second her endeavors, which we hope as many of our readers as can will do.

The Gardener's Monthly.—As Spring opens and the appetite for gardening begins to awake, this excellent magazine, always a pleasant monthly visitor, becomes doubly welcome. Its March number is true to its established character, and contains some most useful and interesting articles. The *Monthly* is edited with great vigor and ability, and in its editorial department contains ample notices, gathered from the whole circle of English and Continental horticultural publications, of all novelties in every department of gardening, besides a calendar of operations for the flower, fruit and vegetable garden and the greenhouse, covering the whole year. It also attracts contributions from the best horticultural writers of the country: some suited to the wants of the novice, and others to those proficient in the art, the whole arranged with a tact which gives an effect of liveliness and variety. The *Gardener's Monthly* has done much, not only to extend but to elevate the horticultural taste in this country, and we heartily rejoice in its increasing popularity.

An universal fault in our American periodical literature,—at least that part of it which has any popular circulation,—is *flippancy*. That our old friend the *Monthly* is wholly free from this charge we will not pretend. Some of its contributors try now and then to be lively at the expense of good taste. But while in the interest of impartial criticism we say this, it would be unjust not to add our conviction that, in stable and solid usefulness, the *Gardener's Monthly* has never been surpassed among the horticultural magazines of America.—*Boston Transcript.*

OBITUARY.

Dr. Thomas B. Wilson.—The scientific world has sustained a severe loss in the death of Dr. Thos. B. Wilson, the late President of the Academy of Natural Sciences, in Philadelphia. Dr. Wilson, who was a native of Philadelphia, has for many years devoted himself to the encouragement and promotion of Zoological science, especially in connection with the Academy of Natural Sciences, an institution which, mainly by his energy, ability, and princely liberality, has been raised from comparative mediocrity, to an equality with the leading kindred institutions of the Old World. The superb collection of birds, which ranks as the third in importance in the world, and the invaluable library of the Academy, are but a partial evidence of Dr. Wilson's unostentatious munificence. Every department of the institution bears his mark and will feel his loss. Although his residence had been removed to Newark, Delaware, half of his time was regularly spent in his native city, and occupied with his favorite pursuits. It is difficult to estimate the value of such men to the cause of science, or the loss which a community sustains when their labors are cut short.

Dr. Geo. Pepper Norris.—It is with regret that we note the death of this rising and enthusiastic horticulturist. We feel that horticulture has lost an earnest advocate, and we an able contributor. His death was occasioned by a disease contracted in the discharge of his duties as Surgeon in the Army Hospital at Wilmington, Delaware.

Dr. Schomburg.—Amongst the deaths of distinguished foreign men of science recently recorded in foreign journals, the name of this distinguished traveller occurs. Many plants that adorn our houses were collected and sent home by him, and a beautiful tribe of orchidaceous plants bears his name,—Schomburgia.

New or Rare Plants.

Camellia alba ornatissama.—The endless variety in Camellias, to which new specimens are being daily added, makes it a serious matter for amateurs to choose wisely. The one which is the subject of this notice was produced in Italy, and is without doubt one of the most beautiful, if not *the* most beautiful white Camellia ever grown, and cannot be too highly recommended. The exquisite form of its small multiple petals, rounded, two-lobed, and imbricated with geometrical precision, establish it as perfection itself.—*Gard. Weekly.*

New English Fuchsias.—*La Traviata.*—Flower good size, tube short, sepals broad, of a bright carmine scarlet tint, well recurved; corolla of good outline, evenly cup-shaped, proportionate, and firm in substance, rich lavender blue in color. Habit of Rifleman (Banks'), well branched, and a profuse blooming variety, making an excellent front-rank exhibition plant.

Anne Bulleyn.—Sepals broad and of firm substance, erectly recurved, of a rich carmine scarlet tint; corolla of good outline, evenly cup-shaped, in color rich rosy lavender. A profuse bloomer; by its erect, well branched, and short-jointed growth, well adapted for pyramid exhibition specimens.

Marvellous.—One of the finest varieties yet offered; flowers remarkably large, sepals of great width and substance, bright carmine scarlet, horizontally curved; corolla two inches in diameter, of a violet tinted plum color, of firm texture, and smooth close margins. Adapted for conservatory, standard, or pyramid growth.

Troubadour.—Sepals very broad, of firm smooth texture and elegantly curved; corolla cup-shaped, even, and proportionate; color a rich olive black, nearer to the latter than any hitherto offered, not fading to a lower or different tint, but retaining its rich hue through sun and rain. Habit adapted for a cone or pyramid, requiring a free unchecked growth during its first pottings.

Pycnostachys urticifolia.—For Winter Conservatory decoration, producing terminal racemes of beautiful bloom, equal in brilliancy of color to Salvia patens.

New Horse-shoe Geranium—*Indian Yellow.*—The acquisition of new colors among the varieties of so popular and useful a flower, cannot be otherwise than agreeable to those who follow up the parterre system of flower-gardening. So much progress, indeed, has been made in this direction, that the term "Scarlet Pelargonium" is now made to stand sponsor for varieties furnishing a long catalogue of colors, running through the various shades of scarlet, crimson, rose, pink, salmon and white. With this progress the name of Donald Beaton will ever be associated in the annals of flower gardening. For many of the later years of his life he devoted himself with much zeal to the cross-breeding of the Pelargonium, mainly with the view of raising new varieties adapted to supply the wants of the flower gardener; and we need do no more than refer to Stella, Cybister, and Lord Palmerston, to show that his labors were rewarded by a fair share of success. Up to the close of his life, Mr. Beaton continued these cross-breeding experiments, and a large number of seedlings, bloomed and unbloomed, were left at the time of his death. From these, starting from the vantage ground already gained, a great further advance was expected, and has since been realized. Some few choice sorts had been selected by him for distribution shortly before he was taken from amongst us, and among them was the variety called Indian Yellow. The whole of the seedlings just referred to, bloomed and unbloomed, have passed into the hands of Mr. W. Paul, of Waltham Cross, and it is from the plant as bloomed by him during the past summer, that our specimen was taken; while among the more juvenile batch of seedlings, many choice novelties have appeared, of which the public will hear more in due time. Thus, from the ordinary race of scarlets, the bedder-out will have acquired amongst Pelargoniums, besides the pinks, roses, salmons, and whites he already possessed, a variety of tints, which will be invaluable to him—passing off in one direction towards orange and yellow, and in the other towards purple-rose or magenta. These novelties, many of them, combine the prolific bloom of the Nosegay race, with the better-shaped blossoms of the more ordinary kinds; and it is to this race of what may be called semi-Nosegays, that our present subject belongs.

Beaton's Indian Yellow Pelargonium is a variety of free growth and of dwarfish habit. It has zonate leaves, and its flower-trusses are well furnished; the latter were, indeed, rather thin at the time of its first appearance in public, but, as the more natural season of bloom came round, this meagreness was altogether lost, and the plants bore well-furnished trusses as much as 4 inches across, and containing fifty or more of the large well-formed blossoms. The color has a strongly marked shade of

Indian yellow, which is at once apparent when the plant is brought into contiguity with either a pure scarlet or one of the magenta-tinted race. The color may be described as an orange scarlet, with a suffusion of golden yellow, or a wash of the same color overlaid. The variety, indeed, is a most unexpected and valuable addition to the materials for the parterre, all the more welcome as being the first of this color which will be placed within reach of the flower-gardener.—*Florist and Pomologist.*

Lapageria rosea *var.* albiflora.—Ruiz and Pavon, Spanish botanists, were the first to discover this plant, clinging to the trees of the forests of Rere and d'Itota, in Chili and Peru, as described in their grand work on the flora of those countries; but the first plant was brought to England by the Rev. —. Wheelwright, and sent to Kew. Shortly after, the celebrated botanist Thomas Lobb sent over several cuttings to Messrs. Veitch & Son. It is a climbing plant, with long and numerous branches; its stem and branches are sub-cylindrical, bare below, and scaly here and there. The leaves are alternate, far apart, lanceolate acuminate, thick, and shining, having five longitudinal nerves, connected by a reticulated nervation; they are about four inches long, and two inches and a half wide. The petioles are very short, twisted, channeled beneath, striated above, dilated at the base, and semi-amplexical; they enlarge after the fall of the leaf, and become more deeply striated. The peduncles, longer than the petioles, are axillary, solitary, dull colored, with several scales at the base (colored). The flowers are large and beautiful, comparable in form and dimensions to those of the white lily; they are of the richest possible crimson, or a lively rose color, in the species we possess, and ornamented with white points inside, and on the exterior sides of the internal segments. In the variety now under notice, the flowers are of a creamy-white tinted with yellow. In those first described, the external base is spotted with dark violet; in the white flowers with rose, or often not spotted at all; they are about three inches and a half long, and about two and a half broad.—*L'Illustration Horticole.*

Saxifraga Fortunei (Fortune's Saxifrage).—This class of plants, as well as the charming variegated specimen which is the subject of this article, has been lately introduced from Japan, and cultivated with great success by Mr. Fortune at the Standish establishment, near Ascot. At first sight it might be mistaken for the Saxifraga sarmentosa, also indigenous to China and Japan, and which is such a favorite and well-known plant for growing in suspended baskets or vases, from which its long stolons and silvery fasciated leaves droop with such effective grace; however, on a close and attentive examination, there are distinctive points of difference visible which give it a specific character of its own, as will be seen at once by comparing the diagnoses of the two plants. The remarkable beauty of its variegated foliage is one of its most striking characteristics, so endless are the shades and depth of coloring in the same plant, each phase of development in the leaf having a tint all its own, which is green, varied more or less by red, pink, crimson, or white, according to the degree of development. The petioles are a bright blood-red, bristling with long crimson hairs; occasionally, though very rarely, the petioles have a greenish shade.

There are about two hundred and fifty different kinds of Saxifrages, nearly all herbaceous and perennial, one or two only classing as annuals. They are indigenous to mountainous districts. European Saxifrages, unless cultivated with attention, are extremely diminutive; but if grown with care in a northern aspect, with a goodly supply of leaf-mould, and tastefully arranged on a miniature mountain formed of stone and pieces of rock, their pretty flowers and remarkable foliage present a most charming and striking *coup d'œil.*—*Gard. Weekly.*

Domestic Intelligence.

Mammoth Trees.—Prof. Whitney's party of geological explorers in California have found, during the past season, even more wonderful regions for mountain and rock scenery, than the famous Yo-Semite, and a grove of bigger trees than those of Calavares, which have heretofore been the pride of California for natural wonders and curiosities, and the great object of interest to all travellers to the Pacific States. These newest, rarest wonders lie farther south in Tulare County; they include mountains 15,000 feet high, the highest in the limits of the whole United States territory, and higher than the king of the Alps, Mont Blanc, also perpendicular walls of rock 7,000 feet, or twice as high as those that gave such grandeur and fame to the Yo-Semite valley, and a grove of big trees—bigger than those into whose hollow trunks three horsemen ride abreast, and on whose stumps the Californians hold mass meetings—which is 25 miles in extent. These new discoveries are in the valley of the Kern River.—*Springfield Republican.*

The Edmonds Pear.—Of all the new varieties that have been discovered or introduced of late years, we have met with none that exceeds in delicious quality and fine melting texture, the Edmonds. Its flavor is unique—combining delicacy and richness, with a flavor that is hard to describe. Its good size and the free growth of the tree add to its value. It was discovered near Rochester, and introduced by Ellwanger & Barry, who, unlike many propagators that over-praise and sell at extravagant prices, have, in their habitual caution against lauding new things, hardly done it full justice. We draw this conclusion from specimens which they have kindly furnished us.—*Country Gentleman.*

Castor Beans.—The soil of Missouri is remarkably well adapted to the growth of Castor Beans, and at the present and prospective prices, perhaps no crop would prove more profitable to the farmer. Those whose opinion of the market is entitled to consideration, have assured us that the price of Castor Beans will not fall below two dollars and fifty cents per bushel during the next three years. Twenty to twenty-five bushels per acre will be an average crop on Missouri lands, thus yielding from fifty to sixty-five dollars per acre. Should the price range as high as three dollars, a greater amount would be realized.

A single hand is capable of cultivating and taking care of ten acres; two hands will manage thirty acres, and at the same time attend to a small crop of wheat, oats and corn. One advantage of this crop is that it may be grown in connection with other crops, without claiming the time which properly belongs to them. Gathering time commences late in August after the summer crops have been gathered, and ceases at frost, before the corn harvest begins.

Besides the direct pecuniary profit arising from the growth of this crop, it pays the farmer largely in the strength it brings to his land. There is no better fertilizer than Castor Beans. The poorest clay soil may be brought up to a lively loam by growing this crop. We have known land worthless for any other crop to be resuscitated in a single season by the growth of this bean. We advise our farmers to try the growth of it, feeling assured that they will find it profitable alike to their pecuniary interests and to their lands.—*Democrat.*

Profits of Pickle-makers.—Mr. L. H. Butler, of Jefferson, Cook County, Ill., has grown sixty acres of Cucumbers this year, which are made into pickles. Mr. Butler estimates that his pickles cost him about 23 cents per bushel delivered in Chicago. He has now 1600 bbls., in the salt, for which he has been offered $16 per bbl. He expects to receive $20 per barrel. Even at the former price it is easy to see that a nice little fortune is in the hands of the enterprising and energetic planter. Let us all go to raising pickles.—*Scientific Am.*

Curculio.—Mr. Cavanach stated his belief that Curculio had been kept from plums by burning sulphur under the trees when the fruit is about the size of small bullets, as that is the time of the curculio's operations. After the pits become hard the fruit is safe.—*N. Y. Farmer's Club.*

Cure for Dogs.—William B. Barnes, Davenport, Iowa, recommends a cure for blight in Pear trees, which we should like to see universally adopted. We think if it did not cure the Pear blight, it might rid the country of another blight ten times more destructive than all the diseases that ever crept into pear orchards. The remedy which he says proved effectual upon thirty years trial is to dig a hole down among the roots of the Pear tree, and bury a dead dog therein. He mentions one old tree thus treated, which recovered and took on a vigorous growth, and bore a full crop every year after. We have no about of the truth of this statement, and hope the remedy will be applied to every Pear tree in America. The sooner it is done, the more profitable it will prove to thousands of farmers who are prevented from keeping sheep in consequence of the worthless curs in the country, which may now be appropriated to some profitable purpose.—*N. Y. Tribune.*

"The Evergreens," Newburyport, Mass.—We had supposed that in summer that most enchanting place called "Evergreens," the residence of Dr. Kelley, was in its pristine glory, and that the only desirable time to see its beauties and the taste displayed on every hand,—but we were mistaken. We recently called on the Doctor, and found him fast recuperating from the effects of a fall, basking in the sunshine and balmy atmosphere of his greenhouse, more beneficial, doubtless, to weak lungs than any "elixir of life" discovered by ancient or modern alchymists. Its doors and windows were open to the dwelling-house, and, as we entered the hall, we seemed to be transported to the pines and orange groves of Florida. The fragrance and beauty of the flowers, the festoons of hanging roses and passifloras, the variety of plants and apartments, their convenience and proximity to the dwelling-house, combined to make this a perfect Elysium.

Besides communicating with the house, the greenhouse is connected with a warm cellar, an L, and a grape-house. It consists of two stories,—a novelty in itself,—combining a greenhouse and conservatory proper. In the lower story, many things requiring only a limited amount of heat and light are grown in the soil, including climbers trained to the top of the house, shading as desired the plants in the upper story. The frame is of cast iron, admirably arranged for strength of glass and the refraction or economy of the sun's rays, as required. But what interested us particularly, was the contrivance for "April showers" at all times, original of course with the Doctor. A large reservoir at the top of the mansion forces water, first warmed at the highest point of the glass structure, to the extremities of the greenhouse and grapery adjoining.—*Newburyport Herald.*

Landscape Gardening.—Mr. H. H. Hunnewell has given the sum of $2,000 to the Massachusetts Horticultural Society as a fund for the encouragement of the art of Landscape Gardening. Mr. Hunnewell, in his letter to the society, hopes the money will be an acceptable addition to the means of the society, "in meeting a want not now supplied, and will tend to the dissemination of a more correct and refined taste for elegant rural improvements than now exists, in laying out and planting our country places, which, he fears, are often the result of chance rather than any well-directed plan."

The Grape Region in Ohio.—*The Catawba in Northern Ohio.*—There are several varieties of grapes grown here, but the Catawba stands preeminently above all the rest, both for table and for wine. There has been no grape found as yet that contains all the good qualities of the Catawba, where the season is long enough to ripen it. The Catawba requires a longer season than any other grape grown in this county. The late fall weather, especially the last of October, and the first of November, gives to the Catawba its peculiar qualities, which it can obtain in no other months in the year. The longer the grapes remain on the vines without freezing, the richer they seem to grow in flavor and in substance; hence the necessity of planting vineyards near some body of water. The rains seem to be less in this vicinity than other parts of the State, —the mean annual depth of water which has fallen for the last four years being a little less than 28 inches. The mean temperature for the last four years is a trifle less than 50°.

The average yield of grapes per acre is 20,000 pounds, and 10 pounds of grapes will make a gallon of wine. The demand for grapes and native wine seems to grow better every year. Six years ago grapes were sold for five cents per pound. Last year they were sold for fifteen, and in some instances as high as seventeen cents per pound at wholesale, consequently grape land has advanced ten fold within the last six years.

The question might be asked, What constitutes good grape land? The land which has produced the best grapes in this vicinity, is of a clayey, calcareous nature, forming a hard, stiff soil. It will effervesce when acid is applied, whether it is taken from the surface, or four feet below. It is naturally underdrained, that is, in the upheavel of the land, the sub-stratum of limestone rock was thoroughly broken up, so that the water has a free passage from the surface downwards, thus completely underdraining the soil, and putting it in the best possible condition for growing grapes, so far as moisture is concerned.–Wm. L. Curtis, in *West. Rural.*

Governor Matteson's Springfield, Ills.—This is truly a magnificent place, of small extent, but every thing when built, being exceedingly ornate. A small kitchen or fruit garden, walled in all round, with the walls covered with fruit trees, trained similar to what is so often seen in England. On the north and east are ranges of houses; that on the east a domed conservatory, filled with various plants; that on the north apparently fruit houses. In the enclosure is the gardener's dwelling, a handsome, two story pressed brick residence. Near this, but out of the enclosure, is a very lofty and commanding curvilinear vinery, which every one, who may have rode on the Chicago and St. Louis railroad, must have seen, as the west end abuts to within a few feet of the railroad track. In the centre is an ornamental iron support for a tank, which, when filled with water, by its great elevation, by means of hose attached, affords abundance of head to shower any part of the house. The vines had just been lifted, and are about half way up the house. Altogether, the place is exceedingly well arranged, and if kept up equal to its design, would be a place worth many a mile's journey to see.—*Prairie Farmer.*

To Soften Old Putty.—Having tried it several times, I know it is effectual: Take a common poker, at a dull red heat, and move it slowly over the old putty, say at the rate of two feet per minute, and you can easily cut it off with a pocket-knife.—*Scientific American.*

Foreign Intelligence.

Cherries under Glass.—I commenced gathering Cherries fully ripe on May 27th. The variety, the Early Purple Guigne, is the finest early Cherry known—old, but not at all common. They are now (June 10) very large, black, dead ripe, and most rich and delicious. The trees from which I have gathered these fruit are some of them growing in the ground and some in pots. They are equally good. The former are grafted on the Mahaleb stock, which is the best stock for trees under glass, as they do not grow so vigorously as those grafted on the common stock. A few days after the ripening of the Early Purple Guigne, the Belle d'Orleans, a remarkably sweet Cherry, but not so piquant as the Guigne, commenced to ripen; and now the Empress Eugénie, a sort of early Duke, giving very large fruit not quite to sweet as the May Duke, are ripe, as are the Knight's Early Black and Werder's Early Black. May Dukes and Archdukes are fast ripening. These will be followed by the Bigarreaus, early and late; and then come the very late sorts, such as the Rival, Late Guigne, and Late Duke, keeping up a succession of ripe Cherries till the end of August and even later. I may be peculiar in my taste; but I confess that, although at this moment I have ripe Peaches, Grapes and Figs, I find more pleasure in my Cherry-houses, and more satisfaction in eating Cherries "ripe and rich," than I do in other kinds of fruit. I never visit these houses without wishing that every good garden, whether north or south, could have one. Without them here, a ripe Cherry would never come to the dessert; for the birds are so rapacious, that no sooner does a Cherry commence to color than it is stripped from the tree. Nets are of but little avail unless double or triple, for they tear them open with their claws. This is one reason why I have resorted to Cherry-houses for ripe Cherries. Another, still more powerful, is the uncertainty of our ripening weather; so that often a fine crop of Cherries is entirely destroyed by a heavy storm of rain, which washes out all their richness.

Cherries may be grown in large and lofty houses, either planted in the borders and cultivated as pyramids, or half-standards, their shoots pinched-in; but I confess to liking a Cherry-house pure and simple, so that I can always carry the key in my pocket, and go in for a Cherry-feast every morning if I please.

When cultivated with other orchard-house trees, the early sorts of Cherries ripen long before other kinds of fruit, and are so very tempting that fingers cannot be kept off; so I devote two houses, each 20 feet by 14, to Cherries only, opening the ventilators for the summer as soon as the early Cherries commence to ripen, and covering the aperatures with double netting, which remains on till the last Cherries are gathered.

The most eligible kind of house for Cherry-culture for moderate-sized families, is the span-roofed, 5 feet high at the sides, and 10 feet to the ridge, and say 20, 30, or 40 feet long, at pleasure. If it is merely for culture and not for ornament, its sides may be of three-quarter-inch boards, with a shutter 1 foot wide on hinges opening downwards, 2 feet from the ground. This is all the ventilation required.

All the varieties of the Duke class, if grafted on the Mahaleb, may be planted in the borders and grown as pyramids, their young shoots regularly pinched-in to three leaves all the summer; but the vigorous-growing varieties of the Guigne and Bigarreau class should be grown in thirteen or fifteen-inch pots, and pinched-in, as directed above. They soon form vigorous and most fruitful trees, beautiful when in blossom, and more beautiful when covered with ripe fruit from head to foot as mine are now. If trees of the last mentioned class are planted out they form large trees, and are most difficult to keep under control, as they are generally grafted on the common Cherry-stock. By-and-by this will be remedied, for by double-grafting the Bigarreau Cherries on sorts that succeed well on the Mahaleb, a more compact and fruitful tree is formed. This method of fruit-tree culture is at present in its infancy; but it is likely to be most beneficial when fully understood by fruit-tree cultivators, who, by the way, are not particularly prompt in adopting a new idea, at least as far as my experience has gone.

A few weeks since I was much struck with the abundance of fruit on some Peach and Nectarine trees in the house of a friend in Sussex. These trees are bushes and half-standards, planted in the borders, the house heated by four-inch hot-water pipes, so as to ripen the fruit in June.—T. Rivers, in *Cottage Gardener.*

Late Grapes at the November Exhibition of the Royal Horticultural Society.—Grapes were wonderfully fine, especially white kinds, most of which exhibited that fine rich golden tinge so desirable in fruit of this description. The best came

from Mr. Manderson, gardener to B. H. Jones, Esq.; Mr. Smith, gardener to H. Littledale, Esq.; and Mr. Skinner, Aigburth Hall. Among the sorts shown were Muscat of Alexandria, Trebbiano, what was called Charlesworth Tokay, and Buckland Sweetwater. Black Grapes were equally good, especially the Alicante, beautiful bunches of which were shown by Mr. Smith. Messrs. Lane, of Berkhampstead, contributed Barbarossa, two bunches of which were stated to weigh 8 lbs. The last exhibitors likewise received a first prize for Black Hamburghs. Mr. Turner and Mr. Wilson both showed this variety. From Mr. Meredith came magnificent bunches of the following Grapes, labelled "not for competition:" White Tokay, Black Prince, West's St. Peter's, Child of Hale (a promising new variety), Barbarossa, Trebbiano, Lady Downes' Seedling, Muscat of Alexandria, and a splendid bunch of Black Alicante.

CENTRADENIA ROSEA.—This is a plant of graceful habit, with curious copper-colored leaves and rosy-white flowers, which blooms in the stove at all seasons, but is most prized for conservatory decoration in the late autumn and early spring months. It is a stove evergreen shrub of small growth, which, like many other useful subjects usually grown in the stove, may, with proper care, be made amenable to warm greenhouse treatment; and it is therefore the better adapted to be applied to the various decorative purposes for which plants are required in the collections of amateurs. If there are qualities in some plants which give them precedence in the favor of lady cultivators, Centradenia rosea may be pronounced as decidedly a lady's plant, and one of the most desirable objects to place on a pedestal, or in a conspicuous place apart from the general collection of plants on stages, as its distinctness of coloring and graceful outlines are seen to the fullest advantage only when it is isolated, and placed as nearly as possible on a level with the eye. Centradenia belongs to the first sub-order and first sub-tribe of the great natural family of *Melastomaceæ*, having for its associates in the division of the order to which it belongs, *Lavoisera*, *Sonerila*, and other genera of stove plants which are held in high estimation. All the Melastomads have a regular corolla of four or five divisions, the petals being inserted at the base of the lobes of the calyx, and the stamens inserted with the petals in two ranks, usually differing in form and size. It is a family especially rich in plants with grand foliage; in the first section we have, besides Centradenia and the other genera just mentioned, the magnificent *Sphærogyne latifolia*, and in the fourth section *Cyanophyllum magnificum*, the two most magnificent in respect of foliage of all known stove plants.

Propagation.—This is one of the easiest plants to propagate by means of cuttings, and the operation may be performed at any season the whole year round. But is not advisable to disregard the time of year and the condition of the plant to be cut from, for these circumstances have much to do with the relative vigor and beauty of the specimens to be formed hereafter. When only green succulent shoots can be obtained, as may happen in the case of having them as a gift, very great care is required to root them. But the best cuttings, and those alone which should be used when the cultivator can choose for himself, are those taken from firm ripe wood of the previous season. The usual mode of striking cuttings of stove and greenhouse plants must be resorted to: pots or pans filled to within two inches of the rim with a mixture of equal parts fine peat and silver-sand, and then to the rim with silver-sand alone. Insert the cuttings—the shorter the better—in the sand, and water gently to settle them; put bell-glasses over, and place the pots on a gentle bottom-heat, where they can be shaded from sunshine. When they have made root, remove the bell-glasses, and let them get moderately hardened for a week; then put them in small pots, using equal parts of leaf-mould, fibry peat, and silver-sand. The mixture for potting need not be sifted; it is best to break up the and leaf-mould as small as hazel-nuts, then mixing them well with the sand, use it rough and fine together, closing in round the tender roots with the most dusty portions of the mixture; water freely, and place on bottom heat in the shade again for four or five days, and then remove them to a shelf near the glass in the stove.

Routine of Culture.—Some cultivators keep them growing in the stove the whole of the first season, a system which we prefer, so as to take full advantage of the initial vigor of the young plants. But they ought to have somewhat of a rest in the latter part of the summer, by being taken to the greenhouse for a few weeks; but they should not be put out of doors, or exposed to any harsh treatment. In September or October give a shift to the next size pots, and place in the stove. At the end of March again take them to the greenhouse, which will result in a more moderate growth than if they remain later in the stove, so as to obviate the necessity of stopping the shoots, and they will flower the better for it. Shade slightly during May, June, and July.—*London Gardener's Weekly.*

PELARGONIUMS.—When in bloom they must have some amount of shade, but they are generally shaded too heavily, so that we do not see their true colors. Give plenty of water, as the least check now will cause the fall of leaves. Plants out of bloom to be set out of doors in the full sun, but not to be cut in for at least a fortnight. This exposure of the plants in their complete state, is one of the most important points in their culture: on it depends the ripening of the wood and the health and beauty of the plants hereafter. When they are cut back, remove them from a sunny to a shady position, and encourage them to break quickly by frequent syringing, but the roots are to be nearly dry. —*Cottage Gardener.*

FISH-TAILED CAMELLIA.—This the name under which a new variety from Japan is introduced to English readers.

FUNGOUS ON TREES.—Cultivators are pretty well aware of the damage that awaits the objects of cultivation on every side from the pernicious effects of *Fungous spawn on delicate tissues.*

A large Green Gage tree, in the autumn of last year, which had been in perfect vigor early in the year, suddenly perished, and on being removed, the roots, as we suspected, proved to be infested with a large quantity of white spawn. It was desirable to replace it with another tree, and it was determined that the substitute should be a Peach tree, in spite of the prejudice against planting a tree of the same natural order as the successor to one that had died. The danger was, we believed, not from exhaustion of the soil, which admitted of easy remedy, but from the old roots. The ground accordingly was trenched deeply, and every particle of root, as far as possible, removed. The eye, however, could not spy out every particle of spawn which might be mixed with the soil; and we were curious, moreover, to see how the new plant would fare, even if any danger threatened it. Nothing could be more promising than the tree, which broke admirably, and all went on well for some months. At length, however, the shoots looked sickly, the leaves fell, and a week ago we found that the tree was quite dead. At first we thought that the summer's drought might have proved injurious, but on examination we found that the young tree had made abundant roots, and that the spongiolets in general were quite sound and healthy. In parts, however, there was the fatal spawn, which we believe was the true cause of evil, though it had not proved immediately fatal to the stock, while the budding had completely perished, without gumming or any thing wrong at the point of insertion.

The mode of action of spawn on living tissues is somewhat mysterious. In very soft tissues, like that of fruit, the mere contact of fungous threads with the cells seems frequently to induce a putrefactive change; but in harder tissues the effect is not so immediate. Our belief is, that in every case, the contents of the threads, imbibed through the membranes of the fungus and those of the tender roots, act as a putrefactive ferment, which, from peculiarities of condition, may be more active on distant tissues than those which are immediately in contact. This, indeed, is mere theory, but it is more or less supported by facts.

These white mycelia are not, however, the only ones which prove fatal. There is a copper-colored spawn, of uncertain origin, which is injurious to plants of various kinds. In this country diseased Potatoes, Mint, Lucerne, Saffron, and Asparagus, have in turns called attention to the evil, and the past autumn has not been without examples. The evil has long been known in France, and the *Tulasnes* have published admirable illustrations of the forms under which it appears on Lucerne and Saffron. We have however lately met with a memoir by GASPARINI, published in 1863, in which he notices its effects in Italy, on Vines and the Indian Fig, where it has also been observed on Sambucus Ebulus, Saffron, and Asparagus. It appears therefore to be quite as much to be dreaded as the white spawn, which seems extremely indiscriminate in its attacks. When once it spreads, the white spawn destroys every thing in its way: the largest trees perishing as well as the humblest shrubs, and even such plants as Strawberries, or seedlings in pots where imperfectly decayed leaf-mould is used, are not exempt. We have not heard of the Copper-mould attacking Vines in this country, but we have been informed of at least one instance where the white spawn proved fatal.

We have long insisted on the need of the examination of the roots of plants in every case where disease cannot with reason be referred to something immediately affecting the leaves or stem; and this consideration of the effects of fungous spawn upon the delicate roots or spongiolets, is an additional motive for caution in the same direction. A timely search may, in many cases, save a valuable tree, as we can ourselves bear witness; and it must ever be borne in mind, that delays in this respect are especially dangerous, as the disease is too often past remedy when it has obtained an ascendancy.—M. J. B., in *Gardener's Chronicle.*

Produce from an Orchard-house.—I have two small houses, one 15½ feet by 12, the other 18 feet by 8½, and in them about eighty trees of various descriptions. The Peaches, Nectarines, and some of the Plums are kept under glass the whole season. The Pears, Apples, and the remainder of the Plums are placed out of doors about the 25th of June, the pots being plunged half their depth in the soil.

The Peaches and Nectarines were over-cropped, one having forty left on it, when prudence said twenty would have been a good crop, consequently they were rather small, but the flavor was generally good. The Pitmaston Orange Nectarine bore a large crop of excellent flavor and size. As regards Plums, Coe's Golden Drop bore a good crop, flavor delicious; Jefferson, two years in pots, bore forty-six fruit of the usual size; Pond's Seedling, thirty fruit, beautifully colored, six weighing 13 ozs., or rather more than 2 ozs. each.

Apples, beautifully colored.—Brandy Apple, 8⅝ inches circumference; Mela Carla, 11 inches; Melon Apple 12½ inches; Reinette du Canada, 13⅞ inches.

Pears.—Beurré d'Esperen, 7¼ inches by 7¼; Beurré d'Aremberg, 9 inches by 8; Josephine de Malines, 8⅜ inches by 8⅜; Winter Nelis, 9¾ inches by 10; Beurré Diel, 7¾ inches by 11. The flavor of those which have ripened has been delicious.—W. H. T., Sawbridgeworth, Herts, in *London Cottage Gardener.*

Vitality of Seeds in the Earth.—In a recent issue of the "Transaction of the London Horticultural Society," it is debated whether or not *Erigeron canadense*, springing up on new turned clay from deep wells, is from seeds which have been there thousands of years. One would think this point could be easily settled by examining the fresh turned up soil, and see whether the seeds are there.

Mushroom Spawn Making.—Mushroom spawn may be made at any time. Take a barrow load of horse-droppings, as fresh as you can get them, and with nothing but their own moisture. Then pick up half a barrow load of cow-dung as thick as you can get it. Break the horse-dung nicely, either through the hands, or passing it through an inch sieve. Then mix the cow-dung and the horse-dung thoroughly together with a spade, fork or mallet. The better it is mixed the better it will be, and if no water is required, so much the better. The mass should be like stiffish leaven. If too thin when beat together, we have cut up some dry litter or straw half an inch in length, and mix with it, to give it consistence, as the stiffer it is, like thick mortar, the sooner it will dry. The heap being all ready, make a little frame, as if for brick-making—say two boards ten inches long and three inches deep for the sides, and two ends four inches wide and three inches deep, nailed together firmly. Choose a flat piece of board on which to make your bricks, and wet the surface with water. Place a pail of water beside you, dip your frame into the water, and then place it on the board; fill the frame with the prepared manure, press it firmly in, and draw a spade or trowel over it to make it all level, and then a stroke on the board with one end of the frame, and the other held obliquely, will bring out your brick of manure as clean as any brick at a brick-making establishment. Place the bricks as made on slips of boards, or at least on a hard surface. They will soon begin to dry, and before the sides are at all hard, make two holes in each brick, one three inches from each end, either with your finger or with a round stick of a similar size. The brick will require turning several times—first on their flat sides, and then on their edges, until they are nearly as dry as common bricks are before they are burned. Then the holes must be filled with spawn, and a little cowdung, etc., as before, daubed over them to prevent its falling out, and a small bed of fermenting matter being made, the bricks are laid on it and built in a heap, as open as possible, so that the heat can easily pass all through them and around them, and then they are all covered over with litter. Just as in a Mushroom-bed, the heat must not be too violent. About 80° to 85°, not a degree more, will do. The heap must be frequently examined, and you will easily perceive when the spawn is running, and as soon as a brick is permeated all through with small white lines, it must be removed to a dry, cool place, where it will keep good for years. If the lines or spawn roots are as large as sewing threads they are too far gone. This is the mode I generally practice, but in all cases where only a little is used, is best to buy it from a respectable dealer.—B. F., in *Cottage Gard.*

Hothouse Grapes in England.—Among other matters, the Grapes in the large conservatory deserve a word of commendation; they have been equally fine this year as in former seasons, and although now half cut, many beautiful specimens yet remain to be seen. Conspicuous among them are bunches of Barbarossa, some of which weigh as much as 6 lb., and measure 18 inches across the shoulders, and as much in length. This variety, grafted on the Black Hamburg, produces more compact and better colored bunches than on its own roots, as well as ripening earlier. Indeed, so compact and handsome are they, treated in this way, that they might easily be mistaken for Hamburghs. The Muscat Hamburgh, grafted on the Syrian, although larger in the berry, is, however, inferior in flavor to fruit of the same kind on its own roots. Burchardt's Prince, as yet comparatively little known, is well worth attention: it is a valuable black grape, with a fine vinous flavor, and is a good cropper. Golden Hamburgh has done well here this year, some of its bunches weighing as much as 2½ lbs. each, and they are very perfect, both in shape and color. Among Hamburghs, decidedly the best is the Frankenthal, large finely colored bunches of which, nestling in the most natural way possible among the still bright green leaves, may yet be seen against the upright east end of this, in all respects magnificent Grapery. The so-called varieties of Muscat, to which particular attention has been before directed, are nearly all cut.—*Gardener's Chronicle.*

M. Boussingault has recently laid the result of a highly interesting series of experiments on vegetation, before the Academy of Sciences. The most important fact is, that while plants, when exposed to light, fix carbon, hydrogen, and oxygen, when placed in darkness they eliminate these elements.

Spongioles.—"Leaves make roots and roots make leaves," is a common and a true saying; but it is not all the truth. Roots are made without leaves, and leaves are made without roots; but neither will go on prosperously for more than one season in the absence of the other, save in the kinds of plants to which leaves were not ordained in the beginning, But the leaves are not the first cause of setting roots in motion, or, as the gentleman puts it, "of throwing out spongioles."

But let us explain as we go. Spongioles or spongelets, or sponge-like organs, are the very ends of the roots of all plants; and a worsted glove on the human hand would make any of the fingers represent the end of a root more nearly than any thing to which it had ever been likened. The end of each finger would be the actual end of the wood of the root, and the worsted finger of the glove would be the spongelet, as you would know to your cost, if you put the finger of the glove in contact with scalding water. The worsted threads and fibres would suck in the boiling water like a sponge, or spongiole, or spongelet, and you would burn your fingers, as many do who do not understand the glove in hand in an argument. Then the sponge-like power at the ends of the roots is a hygrometrical action, not the action of the leaves far off or near to it.—*Journal of Horticulture.*

Value of Land in the City of London.—The value of land in this ancient city is almost past belief. As much as $10,000,000 per acre has been paid.

Origin of Thuja aurea.—It is, we learn, to M. Dauvesse that we are indebted for the elegant dwarf *Thuja* (or Biota) *orientalis aurea*, which was picked out from his seed beds of Thuja orientalis, in 1845. And in 1861 he obtained, in a similar way, *Cupressus Lawsoniana nana*, a variety which assumes a pyramidal form, and has short branches and a compact habit, which give to it a novel and peculiar appearance.—*Gard. Chronicle.*

Antiquity of Garden Plants.—We have historical evidence that existing species have not varied for several thousand years, and the reason is plain enough, because the external circumstances in which they have been placed have not varied. For all practical purposes, therefore, the characters on which species are founded, may be assumed to be constant; and a minute and careful description of a plant will suffice, not only for the present, but for many succeeding generations of naturalists. But we have no warrant from nature to assume that such specific, or even generic, characteristics either have, or will continue to be, permanent for an unlimited period of time; that they will survive all future changes in the physical geography of the planetary surface. We know that great changes may be effected in a brief space of time in the organization of plants by cultivation; and why should not an organic change be brought about in plants when their external circumstances are altered by nature in the course of ages? This world, what is it but a great and ancient theatre, where the scenery of life is ever changing! Look at that majestic and venerable tree; its present form appears to be fixed, yet that very form is as fleeting and evanescent as all the other forms through which that tree has passed from its first life movement in the seed; and what is true of that tree, which is a part of nature, is true of the whole of nature; the present appearance of nature now is no more unalterable than at any other geological epoch: it is the last of the many phases of creation, and equally fleeting with all the others.—*English Paper.*

American Yellow Peaches.—Owing to the fierce sun of the American climate, these yellow Peaches are there held in high esteem, being rich, sugary, and Apricot-like in flavor. One of the most popular as a market Peach in the 'States,' is Crawford's Early, and when grown here in orchard houses, suffering the trees to bear but very few fruit, it is very rich. But perhaps the best of all is the Golden or Yellow Rareripe, properly, in pure Saxon, 'Rathripe,' or early ripe; this is as early as Crawford's Early, and remarkably beautiful, with it red cheek on its deep orange-colored skin. If a very few are left on the tree so as to attain a large size, say 10 inches in circumference, it is a very fine rich Peach; but if the tree is suffered to bear too many, it is quite worthless. These two varieties are, as far as is known at present, more worthy of extra care in their cultivation, than any other yellow American Peaches; but a sort called Exquisite, which ripens here much later than the above, and another called Canary, two sorts received from Georgia, U. S., have proved very good in the sunny climate of Guernsey, in the orchard-house of the Rev. T. Bréhaut.

In the south of England these two, to which may be added the Susquehanna, may probably prove valuable. There are a great number of varieties of these yellow Peaches cultivated and highly esteemed in the various States of North America, a country which will one day have as many "principalities and powers" as formerly had India—many that are doubtless remarkably rich there, but in our mild even climate never seem to attain their full flavor, even when forced; the fierce unclouded sun and the open air—Nature's best ripeners—seem requisite to give them their full flavor. Besides the varieties above-mentioned, the following kinds of yellow American Peaches have been introduced:—Bergen's Yellow, large and good, but a shy bearer; Cole's Large Yellow, not good; Crawford's Late, large and late, but not good here; Poole's Large or Late Yellow, very late, ripening with the Salway, and, even on a south wall, sometimes juicy and very good at the end of October; and Columbia, from Georgia, U. S., a most remarkable Peach. its coat thick and downy, of a dark drab color, and its flesh bright orange and red. It is described in the catalogue of a nurseryman who, a few years since, had a nursery at Augusta—now devastated—as "rich, luscious, melting, and juicy;" here, like the red-fleshed Peach, the "Sanguinole" of France, probably its parent, it is not eatable.

The early kinds of yellow-fleshed Peaches will, I think, be found quite worthy of culture. No Peach can be more beautiful than well-grown specimens of the Golden Rathripe and Crawford's Early, and if large and well-ripened, they are very rich. As a rule, they are better liked by those to whom Peaches are rarities than by Peach connoisseurs.—*Gardener's Chronicle.*

[The above extract is from a piece by Thomas Rivers, who, by his writings, is well known in this country. We apologize to our readers for him, for his 'flings' at our national misfortunes in a pomological paper, by stating the fact that the American Eagle has been killed some score or two of times in the English papers, so that every little British hawk thinks it fashionable to show its spunk by giving it a peck, as they suppose in perfect safety. The *Gardener's Chronicle* gives every week a 'Summary' of the American news. If our readers could read the most outrageous lies weekly cooked up for the English palate, he would, as we do, excuse poor Rivers. The reference to the nursery at Augusta is to J. Berckmans & Co., and is on a par with all the other 'information' vouchsafed to English readers. So far from it being 'devasted,' a letter from Mr. Berckman's recently received through the lines, reports all well, and as prosperous as could be expected considering all things.—Ed. *G M.*]

PENN'A. HORTICULTURAL SOCIETY.

DISCUSSIONAL MEETING, MARCH 7TH, 1865.

The President, D. Rodney King, in the chair.

The Essay was presented by Mr. Thos. Meehan:

"EVERGREENS AND HEDGES."

[With so many superior contributions from our correspondents, we withhold Mr. Meehan's essay for the present. especially as the course the discussion took renders a reference to the essay itself not indispensable.—Ed.]

Mr. King—Has a Deodar Cedar, in a cold and bleak position, on a rocky substratum; which is entirely hardy: opposed, he believed, to Mr. Meehan's views as to its best position.

Mr. Meehan—Some individual plants are more tender than others of the same varieties. Out of 6 Deodars, out one severe winter, he lost four, one was injured and one unhurt. All grew in a rather marshy spot. All the layers taken from the injured one were tender to this day, and those of the one unhurt were all hardy.

Mr. Harrison—The long-continued pruning of evergreens tends to destroy their graceful, natural habit. The pendulous sweeping forms of the fronds of the Norway Spruce, are almost certainly changed.

Moreover, as the trees attain age, unless a ladder is used to continue the pruning, the tops grow to overhang and denude the base, and the true character of the tree is lost.

Mr. King—The Scotch Pine does well with me on a cold dry hillside.

Mr. Harrison—Many evergreens, Norways especially, are injured at the base by cold N.W. winds; and if the tree stand so as to be affected by a current sweeping round the corner of a building, it is equally susceptible on the E. and W. sides,

Mr. King—Have observed the same thing in regard to the Euonymus in some city lots. It is an evergreen deserving of more general culture and attention than it receives.

Mr. Meehan—Variegated evergreens are more difficult to strike and grow than the plain-leaved varieties. Variegated plants, propagated from cuttings, preserve their variegated foliage; but if from roots, their leaves are often green. The effect of light on the cellular structure is very marked. Variegation in a certain sense is a disease.

Mr. Schaffer suggested that in these cases the roots might be sound and the trunk and branches diseased.

Mr. King—The Tree-box grows very rapidly. Have specimens 6 feet high, five years planted. They are entirely hardy, and do well in the shade.

Mr. Schaffer—Covers broad-leaved evergreens in winter with leaves and they come out vigorously in spring. If unprotected Mahonias do not bloom well.

Mr. King—Finds the Cryptomeria japonica to be hardy but ever*brown* instead of *green*.

Dr. Burgin—There must be some peculiar principle, not understood, in the circulating fluids of evergreen plants, which enables them to sustain their vitality and verdure unimpaired in winter. It probably exists in the leaves. We know that water, alcohol, and mercury all freeze at different temperatures.

Mr. Harrison—The evergreens are mainly resinous trees, and their sap contains large amounts of carbon, which also abounds in alcohol. Those plants whose foliage best withstands the cold, are perhaps better supplied, in their fluids, with carbon, the great source of heat.

Mr. King called for the experience of members in the grafting of evergreens.

Mr. Meehan—Take two year old plants, and whip graft them at the surface of the ground, so as to have the end of the scion in the ground. Scions nearly mature may be grafted on potted plants in the greenhouse. Some succeed by saddle grafting, but cleft grafting is the most successful, using wax. The Weeping Cypress is successfully grafted on the *Taxodium distichum*. Scions of the Larch, grafted on the Norway Spruce, grew well, but died in the fall. No doubt there is a peculiarity in the juices of plants which causes them to retain heat. The fluids of some plants have this retentive power to a greater degree than others. In Europe the Privet is always an evergreen; here, in a drier climate, under greater evaporation, it loses its leaves earlier. It is a great mistake to suppose that plants are dormant in winter. In summer the wood is nearly devoid of sap, in winter full; they store it up in winter to expend it in the growing season.

Evergreens like shade, but the soil must be moist. Rhododendrons have their natural habitat under the shade of forest trees; in cultivation, as they grow and require more room, dig around them, and cut off the roots of the other trees adjacent.

Mr. King—Planted some Tree-box among shrubbery, under the shade of trees, and failed entirely. Desired the experience of members as to hedges, and the plants suitable for them. Thinks the hornbeam a very good hedge plant. It is readily and successfully inarched.

M. Harrison—It is noteworthy, that while many enlightened English farmers are removing their hedges, as occupying, with their roots, too much ground, the farmers on the cheap soils of the great West, are planting them by miles, not only as boundaries, but for shelter against the fierce winds that sweep over the prairies. The Honey Locust is often used for hedging: its thorns are strong and tough, and their puncture causes wounds that to many are very serious.

Mr. Schaffer had seen the Silver Thorn at Mr. Meehan's, and it was a very handsome plant for hedging. Would like Mr. Meehan to give the Society some account of it.

Mr. Meehan—The Silver Thorn is a species of Eleagnus from Asia, and promises well. Some kinds of hedge plants grow too fast; others, like *Pyrus japonica*, too slow. The Honey Locust and Osage Orange are subject to attacks from mice in winter. The Silver Thorn is bushy, hardy, and thorny; grows to a complete hedge 3 feet high in three years; the leaves are beautiful; the roots wiry; and at three years of age, bears seed which grow readily. Its flowers are as sweet-scented as the Jessamine; it is perfectly hardy, though a native of Asia. The *Pyracantha* is not hardy in sunny places. One variety of it is quite bushy, bears white berries, and its foliage endures the winter well.

Mr. King—The Red Cedar is too much neglected as a hedge plant. There are some hedges of it in this country of great age, still quite thrifty and useful.

Mr. Meehan—At the West it is planted by thousands. Of new evergreens, some have entertained high hopes of the Sequoia gigantea (California Giant Tree) as an evergreen for the Atlantic slope; it appears to suffer from a mildew in our eastern climate.

Mr. Schaffer—The Magnolia grandiflora at the South is evergreen, and very showy; its large, glossy leaves, are quite a beautiful feature in the forests there. Near Mobile there are fine specimens. In the city yards of Philadelphia it seems to flourish well. An attractive specimen is growing in Franklin Street above Wallace.

Mr. King—The Osage Orange is a valuable tree for street planting. Has seen them in Baltimore trimmed into very graceful shapes. Is not aware that any insect attacks it.

Mr. Meehan—Yes, there is a species of *coccus* which sometimes kills whole rows.

Mr. Schaffer moved the thanks of the Society to Mr. Meehan for his valuable Essay and illustrative remarks, which was unanimously adopted.

MONTHLY DISPLAY & BUSINESS MEETING, MAR. 21.

The exhibition tables were not as full as usual for March, but many very interesting matters were brought forward.

The premium for the best Basket of Cut Flowers was obtained by Donald McQueen, gardener to J. Longstreth; also the best Table Design and the best Hanging Basket. The basket was principally filled with a species of Davallia, the creeping rhizomes of which twined around the outsides in every direction, giving a 'rustic' character to the basket that no art could equal.

The best Hand Bouquets were awarded to F. O'Keefe, gardener to Joseph Harrison, Esq.

The best 6 Hot or Greenhouse plants was taken by D. McQueen, but as no list was handed to the Secretary, as called for by the rules, the premium will probably be withheld.

Edward Hibbert, gardener to Fairman Rogers, Esq., took the premium for the best 12 plants. They were Franciscea eximea, a beautiful plant; Conoclinium ianthinum, a coarse growing plant, but it flowers so easily at this time as to be almost indispensable; Scilla ciliata; Cytissus racemosa, a beautiful yellow pea-shaped flower, blooming very abundantly; Begonia Verschaffelti; Deutzia gracilis, a queer greenhouse plant, but yet a pretty pot plant; Siphocampylos bicolor; Rogiera thyrsaflora, a sweet but not showy thing, and Azaleas and Camellias.

The most interesting feature of the evening was the gorgeous display of Camellias, by P. Mackenzie & Son, who gained all the premiums for these beautiful flowers. The best six were Jenny Lind, albo pleno, Mr. D'Offey (a magnificent new variety), Hume's Blush, Dunlap's White, Mrs. Lurman, Reine des Fleurs.

For the best collection of Cut flowers, they had *sixty-five* varieties. Among the newer ones that were particularly good we noted, Tricolor imbricata pleno, Duchesse de Liza, Marie Piccolomini, Maculosa, Count de Gomer, Triomphe de Bergame, Lady Henrietta, Matholiana alba.

Azaleas, best six plants to E. Hibbert. They were Iveryana, Perryana, Criterion, Arborea purpurea, Duke of Devonshire, Gloire de Belgique, all first class varieties, and very well grown.

Best single specimen Azalea to Donald McQueen.

A special premium was awarded to Thomas Meehan, for a collection of 12 Auriculas; to Peter Mackenzie & Son, for a very fine collection of miscellaneous greenhouse and hothouse plants; and to E. Hibbert, for a fine collection of variegated plants, and for Selaginella Lyalii, exhibited for the first time, and considered meritorious.

Mr. R. Robinson Scott was awarded a premium for the discovery of a new ornamental Fern, allied to Asplenium Ebenoum and A. pinnatifidum, discovered by him on the Schuylkill.

Among the remarkable plants exhibited, was *Azalea ovata*, from P. Mackenzie & Son. The flowers were more of the appearance of Kalmia latifolia, than of the common forms of Azaleas. It is a distinct species from the north of China, and will no doubt be hardy. The same firm also exhibited Empress Eugenie Violets; the new Double Nasturtium, one of the most desirable of modern introductions, and the Silver Hydrangea.

The only vegetables shown at this meeting came from Jacob Huster, gardener to Col. Alexander Cummings, to whom was awarded the premiums offered.

The Committee on the new Hall reported that they had examined various sites about the city; and that the most eligible under all the circumstances was one on the corner of Broad and Spruce Streets, the price of which was $23, 157 75. Plans for the building were also submitted, and the cost estimated at $30,000. The report was adopted, and also resolutions authorizing the Committee to collect funds, secure the lot, and "go a-head."

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

THOMAS MEEHAN, Editor.
W. G. P. BRINCKLOE, Publisher. JUNE, 1865. VOL. VII.---NO. 6.

Hints for June.

FLOWER-GARDEN AND PLEASURE-GROUND.

One might as well imagine summer without sunshine, as June without Roses,—therefore, in "operations for June," we must say something of Roses first and before all. So first, get Roses on their own roots, for there are very many objections against a very few advantages to their being budded on Manetti stocks. Give them rich soil: the Rose, like the Grape, is a high feeder. In pruning Roses distinguish between Hybrid Perpetuals and the other kinds,—the latter may be cut very close, and bloom all the finer for your severity, but the Hybrid Perpetuals are stubborn under such chastisement; you must only thin out the weak ones and shorten lightly those of stronger growth. If you want a fine bloom of Hybrid Perpetuals in the fall, do not let all the shoots flower in spring that are willing to bloom,—cut the buds off; and of all Roses, cut the flowers off as they fade, unless seed is desirable.

Peg down Roses where a heavy mass of flowers is desired. The side shoots push more freely for this treatment.

When the Rose-bug makes its appearance, have them shook into a pail of water and destroyed; and when the little 'worms' or larvæ of the Rose-bug follow, with their damaging depredations, have them crushed as fast as they appear.

In flower-gardening, every opportunity will of course be taken to keep down the weeds. As soon as they are barely visible, the ground should be hoed over lightly, and the surface afterwards broken fine and smoothed over with the back of a small rake. This not only gives a neat and cared-for appearance to the flower-beds; but the free admission of air, which a thorough pulverization of the surface-soil effects, is one of the best means of keeping the soil from drying out, and thus avoiding the necessity of frequent waterings, which, though they cannot at times be avoided, have always attendant disadvantages. Should soil so finely raked appear to 'bake,'—that is, form a crust on the surface,—after heavy rains, all you have to do is to hoe and rake it over again. It will be any thing but labor lost on your flowers.

As soon as Tulips, Hyacinths, Lilies, and other bulbs have done flowering, and the leaves at their base finished growing, they are better taken up and put in flower-pots, mixed with dry sand, and set in a dry place till the season of planting in October again arrives. A correspondent of our paper, last year, recommended taking them up before the leaves are quite faded, as making bulbs that will flower the better the next year for the check. It is reasonable, and we shall be glad to have our readers' experience with the new plan.

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 in 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.

No trees, Evergreens especially, should be suffered to have grass grow about them for a year or so after planting. It becomes 'rank' in the deeply loosened soil, abstracts moisture, and otherwise seriously interferes with the tree. When the tree gets a fair start, grass does less injury, and when it becomes a tough sod, and the tree by its shade, or say by frequent mowing keeps the grass short, the grass roots do not penetrate deep, and the sod is a benefit, by keeping the surface spongy, and the substratum cool.

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 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.

Many herbaceous plants, such as Phloxes, Hollyhocks, and similar plants, that are scarce and valued, may be propagated now very easily, by taking portions of their flower-stems before the flowers open, and inserting them as cuttings in a half-shaded, cool, and not dry situation. Layering of many things, shrubs, half-shrubby perennials, etc., should be done before the young wood becomes too hard, if good plants are required the first year. Most plants root more quickly by having a notch cut in the layered shoot. Good, rich soil, put just about layers, is very important. Good soil favors an abundance of roots. One of the greatest mistakes in gardening is the prevalent notion that plants in a poor soil have a greater proportion of roots than in a rich one.

FRUIT GARDEN.

Watch newly planted fruit trees. If they have have but a few weak leaves only, it shows the roots have been injured; then prune them severely, which will make them grow freely. It should be a main object to make all transplanted trees not merely have leaves, but have new shoots at the earliest possible moment. If they are growing very well, they may be allowed to perfect a few fruit. Overbearing on a newly planted tree is, however, one of the best ways of making it stunted for years.

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.

Blackberries are not always ripe when they are black. Leave them on till they part readily from their stalks.

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.

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.

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 as far as they go, they will vary in their application.

In the interior department, Peaches that have been slightly forced will be about maturing, and the atmosphere must be allowed to become dryer, by admitting more air and using the syringe less freely. This is necessary, not only to perfect the flavor of the fruit, but to mature the wood properly for next season's fruit. All of this has to be done with caution, as a sudden change from a moist system of culture to a dry one will be certain to injure the tissue and breed disease.

Red-Spider and other insects closely follow on the heels of a dry atmosphere. They must be watched, and nothing suffered to injure the leaves till by natural maturity the plant has no longer use for them.

Grapes in cold vineries will now be of a size fit for thinning. In those cases where the bunches are intended to hang long on the vines, they should be thinned out more severely than those expected to be cut early. A close, compact bunch favors mildew and early decay.

Fine, rich color is always esteemed as one of the criterions whereby to judge of the excellence of a fruit. Sun-light is of first importance; but it is not generally known that this is injurious when in excess. In a dry atmosphere, with great sun-heat, where the evaporating process goes on faster than the secretive principle, what should become a rich rosy blush in a fruit, is changed to a sickly yellow; and the rich jet black of a grape becomes a foxy red. Some grape-growers of eminence, in view of these facts, shade their vineries during the coloring process; but others, instead, keep the atmosphere as close and moist as possible. The latter course detracts from the flavor of the fruit. The best plan is that which combines both practices.

VEGETABLE GARDEN.

In Northern latitudes, and even in many parts of the Middle States, the first week in June is the chief period chosen for the main crops of Corn, Beans, Squash, Melons, Cucumbers, Okra and other kinds of seeds that are liable to rot if sown before the ground has become quite warm. Most persons plant Corn in hills. This is an error in garden culture. It should be sown in drills, and at such distances as ultimately to be eighteen inches apart. In hills each plant robs the other. It is so employed in field culture for the convenience of hoe-harrowing by horse-power. Pumpkins and Squashes grow very well amongst Corn, neither crop seeming any the worse by the presence of the other,—probably each feeding on the different matter.

The Swede Turnip or Ruta Baga should be sown about the end of the month. A well-enriched piece of ground is essential, as by growing fast, they get ahead of the ravages of the fly. Manures abounding in the phosphates—bone-dust, for instance—are superior for the Turnip.

Sweet Potatoes must be watched, that the vines do not root in the ground as they run, which will weaken the main crop of roots. They should be gone over about once a month, and with a rake or pole, the vines disturbed somewhat from their position.

Cabbages and Broccoli of all kinds for fall use, are to be planted out this month, and the ranker the manure, the better they seem to grow.

Carrots and Beets for winter use may still be sown on rich, light soil, and often make roots much preferable for flavor and tenderness to those sown earlier in the season.

Celery for early use is often planted out this month, though for winter use July or August will be early enough. It is best to set out in shallow trenches, for convenience in watering, the Celery being fond of hydropathic appliances. If the ground has been deeply subsoiled, and the subsoil well enriched, the trenches may be near a foot in depth, for convenience in blanching; but beware of planting down in poor, barren subsoil. Many plant in double rows. Where very superior Celery is not an object this will do; but the single-row system is the best for excellency. The season is now arriving when the advantages of subsoiled ground will be apparent. In such soil plants will grow freely though there be no rain for many weeks.

Onions, on showing signs of decaying foliage, should be drawn up and thoroughly dried before stowing away. The great secret of keeping Onions is to get them first thoroughly ripe, and then thoroughly dry, before putting away in the store-room.

Herbs for winter use should be cut just about the time they are coming into flower. They should be put in an airy place, but in the shade, to dry, and be turned over every other day for a week, before being tied up in bundles and hung up in the store-room. Clean house-keepers put the dried herbs in muslin bags, which keeps dust, flies and spiders from injuring them.

Endive is becoming very popular as a winter salad. Now is the time to sow. The Curl-leaved is the most desirable. Sow it like Lettuce.

HOT AND GREENHOUSE.

Oranges, Oleanders, and other large plants in pots or tubs, that are now commencing to grow, should be shifted into larger or fresh soil if they require it. This is generally known by the growth being weak, and the leaves small. Sometimes the plants are sickly, through the soil having become sour, and the roots, in that case, are rotten. This is usually known by the leaves of the plant being yellow, and of a very sickly appearance. The best way is to take out and wash the roots, just before or as growth is commencing, and repot anew in fresh soil, employing the smallest pot or tub that the roots can be well got into. When very sick it is best to cut them in very severely, and plant out in the open air, in a rich and not too dry a soil,—nature is one of the very best restorers in these cases.

Cuttings of Geraniums or similar plants, required for flowering in houses next winter, should be put in at this season.

Camellias and Azaleas, and other things that it is desirable to inarch, may be operated on as soon as the wood has progressed from the watery to the woody state.

Communications.

INSECTS ON FRUITS.

BY RICHARD M. CONCKLIN, COLD SPRING, N. Y.

After devoting a large portion of my time for many years to the cultivation of fruit, both as a source of profit and family enjoyment, I am half-inclined to be discouraged. The ravages of the Curculio are becoming more and more serious. Although well supplied with choice varieties of Plums, very little of the fruit ever arrives at maturity. My finest Pears are almost ruined; and, what is worse, all our best dessert Apples are more or less injured: not merely by being bored with a chasm in the centre, and a road tunneled from thence to the surface for exit—that we could put up with, so long as a part of the apple retained its flavor—but a second progeny commences to work just as the finest autumn varieties approach maturity; and as the whole fleshy portion of the apple is marked and stained with innumerable roads and lines of travel, some of them almost too fine and delicate to be seen without close attention. The effect is to give the apple a bitter and unpleasant flavor, and soon causes it to decay rapidly. We have put up fine fall apples, and, after placing them in the coolest places in out-buildings, in the course of ten to fifteen days, on examination, have found them almost a total mass of decay: not commencing in spots upon the apple, but the entire fruit going at once. Some of the finest early autumn varieties are so ruined in this way, that we have for many years abandoned all idea of finding an eatable specimen.

Now this is an evil with which we had not to contend in the early progress of fruit-growing in this country. Then little indications of the activity of the Curculio existed after the spring and first summer months. The new feauture was developed in the apple on hand, among the finest and most melting-fleshed early varieties. Gradually, however, these effects began to be seen in later fruits; until, at the present time, many of the early winter varieties, which used to keep till spring, are attacked in the same way.

The deductions of Professor Rathvon, in his paper on the "Hybernation of Insects," published in the December number of the *Monthly* for last year, "that there is more than one brood produced in the year," is undoubtedly correct; but I think his conclusion, "that the second brood is not so injurious as the first," is an error, as far as the more valuable fruits are concerned. The first punctures the young fruit, and causes vast quantities to fall prematurely, when it can in most cases be well spared; and much of that which is wounded recovers on the escape of the insect, and matures; while the latter attacks the mature fruit, and seldom leaves it until it is entirely unfit for the table, and scarcely valuable for stock. Enormous proportions of the fruit also falls so early in consequence of the injury, that it cannot be got to market before it commences to decay. With the utmost activity I could make during the past season in collecting and feeding these apples to horses, cattle and hogs, selecting what would do for market, the ground in many places is thickly strown with rotten apples, in my orchard at this time.

I do not know whether other localities have been visited with these pests in such numbers; doubtless the light and warm nature of the soil in this vicinity affords unusual facility for the Curculio. I think, however, that the difficulty is extending to other regions. The important question is, what remedy can be adopted?

Rough cultivation, inducing vigorous habit in the tree, will somewhat counteract the evil; but this only partially I shall apply, by way of experiment, a quantity of gas lime on some portion of my orchard early in the spring. Alkaline washes, profusely applied to trunk and branches, as late as would be safe, and ashes and salt spread broadcast, will also be used.

Cannot you, Mr. Editor, suggest something; or, perhaps some of your correspondents may be able to come to the rescue.

THE ORCHIDS OF NORTH AMERICA.

BY R. O. THOMPSON, NURSERY HILL, NEBRASKA.

Under this head I shall treat of Platanthera, Gymnadenia, and Spiranthes as orchids. The two former are only divided, as Wood says, "by characters purely artificial," and should be united with the Orchis.

The following varieties I have in cultivation, and give the location from which they were received:

Orchis nivea (Baldw.)—Flowers pure white, very delicate; beautiful as lacework; plant tender in this latitude. Received from Arkansas.

O. flava.—About fifteen inches high; leaves lanceolate; fifty to sixty flowered, flowers a pale yellow; hardy here with protection. From Kentucky.

O. Hookeri.—Entirely hardy; one foot high; flowers with faint purple, twelve to fifteen flowered. From Northern Illinois.

O. orbiculata.—Two feet high; many flowered; leaves flat upon the ground; flowers in long racemes of greenish-white; hardy. From Iowa,—also found in Nebraska.

O. hyperboras.—Hardy; a large coarse species; flowers, with me, invariably white. From Michigan.

O. lacera.—One foot; very few leaves; flowers not showy, of a greenish-white; hardy. From Ohio.

O. fimbriata (Ph.).—Three feet high; smooth long stem; flowers very numerous, large, a showy purple; a desirable variety; hardy. From Wisconsin.

O. peramœna.—Hardy; grows three feet; strong stem; about forty flowered; flowers medium, faint violet. From Ohio.

O. cernua. One foot high; hardy; flowers a straw-colored white; spike with many flowers; fragrant. From Pennsylvania.

O. gracilis.—One foot; spiral stem; flowers white and very fragrant; a very delicate looking plant: hardy. Found here in but one locality on a high prairie.

O. ciliaris.—Two feet high; flowers a bright orange color, with purple tinge, plainly fringed; many and large flowered; hardy. From Kansas.

Last season I had in flower, taken the fall before from the prairie, a species that the flower seems almost the same as above; yet, this variety is but five-flowered, and they are in a twisted whorl at the top of the plant; they are very novel, and with a perfume so sweet that it is almost nauseating. I think this a new species, and shall send you pressed specimens this season. Besides the above, I have ten or twelve from New Mexico and Texas, on trial—they are tender.

PRODUCTIVE CAPACITY OF SOIL.

BY DR. J. S. HOUGHTON.

"Nothing seems less realized than the productive power of the soil, when it is of good quality and well cultivated." This sentence was written by the late Hon. Josiah Quincy, of Boston, more than twenty years ago. It struck me at the time it was published as a great truth, and so sunk into my mind that I have it in my memory ever since, and have frequently repeated it to myself, when engaged in agricultural and horticultural labors. The idea which it involves was very forcibly revived by reading, in a late number of the *London Gardener's Chronicle*, (Feb. 11th, 1865), some remarks upon the effect of a large quantity of sewage manure upon some meadows, near Edinburgh, Scotland.

"They have," says the writer, "for years and generations been putting 10,000 tons of sewage per acre over 350 acres of poor land near the city. By the use of this sewage those 350 acres are made to keep 2000 cows during the season of growth. They must yield 50 tons of grass per acre to do it,—or a ton of grass to every 200 tons of sewage poured on. There is nothing like this in product to be seen any where in England, nor do we suppose there is any thing like it any where else on the face of the earth."

In another part of the same article, it is stated that the London Market-gardeners, who produce immense crops, apply from 60 to 80 tons of rich solid manure per acre to the Cabbage ground, in a single year.

I have no comments to make upon these statements. Incredible as they appear, I believe they are facts, as I have seen them stated before in the same journal, which is of the highest authority, without contradiction. They carry forcible suggestions with them to every reflecting mind.

FAMILIAR BIRDS.

BY J. P. NORRIS.

III.—THE SONG SPARROW.

Perhaps some of your readers will recognise this well-known little bird under his common title of "Tom Tit." Let me entreat you, reader, if you are in the habit of calling this bird by that ugly name, to give it up at once, and adopt the more euphonious and correct one, which we have given at the head of this article. Birds, when not called after any *person*, should be named with reference to some peculiarity of their *manner or plumage*. Thus we have the "Chirping Sparrow," from the incessant "chip, chip, chip," which it utters, the "Mocking Bird," from the great power of imitation possessed by the bird so-called; and the "Song Sparrow," from its great vocal powers. Many other instances might be pointed out, did we consider it necessary to do so. The same rule applies to the scientific or latin names.

The Song Sparrow (*Melospiza melodia*) is, we may say, a *resident* in Pennsylvania, as only in a few winters when the cold has been unusually severe has it left us. These remarks apply especially to the few last years. Its plumage is plain and sombre: but, with us, that is one of its attractions. It is a curious fact that nearly all birds that sing well have a plain plumage. The Mocking Bird and Song Sparrow of this country, and the famous Nightingale of Europe, afford excellent examples of this.

The Song Sparrow is among our earliest songsters, and his notes, together with those of the Blue Bird and Robin, form a trio which, when heard together, in the spring, are not soon to be forgotten. Often have we stood enraptured on a balmy, spring day, listening to the notes that poured forth from his mouth, "sweeter than honey," as the poet Homer says of the venerable Nestor.

The service that the Song Sparrow does the agriculturist cannot be too highly estimated. Many thousands of noxious grubs, caterpillars, and other insects fall a prey to each individual of this species. Would you be convinced of this? If so, take your stand near a nest of this species, where you can see all that goes on, but where the bird cannot see you. Watch the pair attentively as they bring food for their helpless young. Now the father darts off, and, returning in a few minutes with a large grub in his bill, deposits his morsel in the open mouth of one of the little ones. Now the mother is off after some winged insect which she descried passing by. See, she returns successful, and readily disposes of the prize. This is repeated for several hours each day, besides the number which they must themselves eat to sustain life.

The Song Sparrow does not seem to be very particular where he builds his nest, as we find it sometimes on a honeysuckle, or on a rose, or again on the ground, or in a strawberry-bed. All of these places alike suit him. He collects a few pieces of dried grass, and forms these into a nest,—if on the ground very loosely, but if on a bush the nest is a wonderfully neat structure.

In this she lays from four to six little mottled brownish-red eggs, from which, in two weeks' time, as many little birds make their appearance, who soon make ther wants known to their busy and loving parents, whose delight it is to supply them with choice grubs, worms and insects.

ZINC LABELS.

BY P., PHILADELPHIA.

I am very much interested in discovering a good system of labelling plants, as well as in making labels, and read with much profit the excellent communication of your correspondent "Horticola," in last month's *Monthly*. I have long wished to get a good recipe for Zinc labels, and that by your correspondent is the first I have met with. I would be glad to know, however, whether it ever oxidizes so as to have a whitish matter over the ink, as that is the fault with every prepared ink I have heretofore used?

In view of this objection, I have heretofore found nothing better than the common lead pencil,—a hint, by the way, for which I am originally indebted to your magazine. I have used the common lead pencil for writing on Zinc now five years, and the writing is as legible to-day as when first written,—but the objection, as I have before said, is the white oxide. In most cases one has to rub on the label in order to read it plainly, which. on things near the ground is a great nuisance. The oxide does not obliterate the writing, but seems to make a powdery covering, which disappears immediately when wet.

If your correspondent's plan will give us a label which will always and under all circumstances be readable, it will be a great step in advance in the gardening art.

EXPERIMENTS WITH SEEDLING POTATOES.

BY THOS. NEILL, SANDUSKY, OHIO.

On reading the article in the *Monthly* on Mr. Goodrich's Potatoes, I was reminded of my own experiments. Having conceived the idea that the rot was caused by the long use of the original seed, and that it should be renewed from the apple as a sure remedy, I succeeded, in the fall of 1856, in finding three small apples. In 1857 they were sown in a hotbed and transplanted; the soil and season very wet. By memoranda, I find that on the 25th of September I gathered No. 1, two hills, from one hill 34 potatoes, and from the other 23, two-thirds large enough for the table, and flesh pure white. No. 2, flesh color, blue eyes; from two hills 24 and 21, flesh pure white, size as above. No. 3, light flesh color, 7 potatoes, flesh pure white. No. 4, blue, 16 potatoes, flesh pure white. No. 5, flesh color Lady Finger.

No. 6 and 8, white and late. Some 20 or 30 others killed by frost, of all colors, from white to black, all small; and one red, 44 potatoes (lost), it covered near two feet.

In 1858 I found No. 1 to contain two distinct kinds; one round and growing compactly; the other long, and resembling Prince Albert, larger and spreading over a large space.

The Blues also differed: some remained the same, and some became a rusty brown.

The late whites also differed; one proved to have a carmine eye, and promised to be the most valuable as to yield and quality.

The blossoms of this year were splendid large tufts, 6 to 8 inches in length, from pure white to purple, and produced bunches of apples, many of which would fill a pint; they actually covered the ground.

In 1859 I again sowed seed from the new vines, and planted out 45 hills, expecting a greater improvement. Much to my surprise, it was the reverse,—in digging I found many hills entirely rotten, other one-half, three-fourths, and some one or two left; a few hills sound, and gathered about one-half peck, the potatoes all white outside, none pure white inside, and many red or a shade of red,—none worth saving.

As to the main crop first grown in 1857, it had increased largely. Of the carmine-eyed whites I had 5 rows 40 rods long, and the most luxuriant crop I had ever seen—they all rotted and were lost. I have still the blues and browns, but they all rot. The flesh of the mixed lot of 1857 were as different as the outside: some red and striped with red; some black outside, and so deep purple as to be almost black, and only vieued white,—they have since lost most of their inside color.

In 1859, from September 1st., to October 8th, we had 6.840 inches of rain.

MISCELLANEOUS SKETCHES.

BY ORCHIS.

DEAR MONTHLY: In my occasional stray notes of passing events in the horticultural world, that have been contributed to your pages since the commencement, I date some of the happiest hours of my life. That they have elucidated any new mysteries, or even smoothed the path of learning to the beginner, I may very well doubt; but to him who penned them, they have been like social pleasant chats with confidential friends; and so to you, dear readers, I impart my sorrow, as of old I did success.

In looking out of my window, and viewing the devastation caused by relentless, changeable climate, all hopes of future pleasure, that have been so fondly cherished in these my choicest pets, are thus rudely blasted; and as I take my frequent and accustomed walks among these marked evidences of an almost parental care, and see many of my most valued plants either badly injured, or irretrievably passed all human aid, a desponding gloom settles upon my mind, requiring all the graces of my trees, to cast aside.

Sweet *may be* the uses of adversity; but in the height of our regret and sorrow, it is difficult to realize the benefit of such "blessings in disguise."

To one who dearly loves the works of nature, and becomes attached to the homeliest weeds that grow, —regarding them as wonderful and sublime evidences of a Creative mind, far above the most exalted conceptions of the human race,—the more beautiful and rare are, of necessity, respected with a love so intense and pure, that the world may well regard such instances in a naturalist as foolish in the extreme. But, to the readers of our *Monthly*, who in most cases can mourn with the unfortunate, and rejoice with the successful cultivator, I address my tale of sorrow.

The past winter in this neighborhood, (a few miles N. W. of Philadelphia), although apparently mild and unchangeable, has been in reality the most severe on half-hardy plants, that we in this immediate section have realized for years. A *Cunninghamia sinensis*, now 12 years old, and about 10 feet high, growing in the collection of the writer, has been killed to the ground. This magnificent specimen, perfect in outline, and unsurpassed in gracefulness, has never before been injured in the least. In past years, not only did the buds retain their vitality through the winter, but the foliage would continue unchanged, a beautiful pea-green tint, giving promise in the years to come of a sight unknown to our botanists of a northern clime. Another of our favorite plants, a fine specimen of the *Cryptomeria japonica*, about 10 feet in height, and of excellent proportions, was also entirely destroyed. The foliage of this particular plant has heretofore preserved its vitality in a remarkable degree, but this spring it has been killed root and branch. Within a few steps of the above, is standing an equally fine specimen of the *C. japonica* var. *Lobbii*, with a peculiar golden tint to the leaves, that has always been greatly admired on account of the lively contrast it exhibited. This variety, which has always heretofore been inclined to prove more tender than the species, has this season escaped, with the loss of a few dead twigs.

Other good specimens of the *Cryptomeria*, in different parts of our grounds, have suffered more or less, but remain alive. A group of *Yews*, containining a number of the different marked varieties of *T. baccata*, together with distinct species, are more injured at present than for several years. *Cupressus Lawsoniana*, and *C. Nootkaensis* (Thujopsis borealis), are each slightly browned, and present many dead twigs. A row of large *American Arborvitæ* are considerably injured on the side facing the Northwest. Beds and rows of young *Junipers*, *Yews*, and *Arborvitæs*, are badly injured; more so, in fact, than for a number of years past. A very large *Deodar Cedar* in this vicinity, is killed outright. A large specimen of *Abies grandis*,

heretofore entirely uninjured, is at present much browned. *A. Douglassii*, killed.

The effects of last winter, has once more furnished evidences of our want of knowledge in regard to the unknown laws that govern the lives and growth of plants. Smaller plants of the *Cunninghamia*, etc., have stood well without protection. *Picea Webbiana*, and *P. pindrow* never before looked so well. *Abies Smithiana* (or Morinda) is not injured in the least. Half-hardy *Junipers* and *Biotas* look beautiful, etc. We thus have a study for elucidating the difficult problem of acclimating plants; and we must confess that every year adds to our greater mystification.

Even as I write, the terrible news comes flashing over the wires, announcing the accomplishment of a crime so entirely unjustified, and without the least shadow of an excuse, that the whole world will stand aghast at its perpetration. Our horticultural community, although generally refraining from an active political life, still feels as deep an interest, and as devoted a love for the welfare of our common country, as any class of citizens in our midst, and we therefore mourn with real sorrow for the great loss we have all sustained.

This is not the place for an eulogy to the departed statesman; neither have I the ability, were it so; but I could not repress the desire to add my humble testimony to the many virtues, and purely unselfish course of one of the best Chief Magistrates with which our country has ever been blessed; and that his successor may emulate his moral goodness, and the plain, undeviating principles which he practiced, is the sincere desire of your friend.

DESTRUCTION OF FRUIT BUDS.

BY S. W., QUINCY, ILLS.

In your issue for February, under the heading of "Fruit Garden," the destruction of the fruit-buds of the Peach and Apricot is attributed to the shining of the sun upon them when frozen. While this is, no doubt, one cause of the injury, some facts seem to indicate that it is not the only one.

In the autumn of 1863, my young Peach trees ripened their wood finely, and were well set with fruit-buds. At the beginning of winter, a stack of straw was built against the south side of one tree, so close as to overhang and almost envelope it. *The sun did not reach it the whole winter.* Many of the branches were also protected from the wind, Snow, rain, or sleet could only reach a few branches on the north side.

About the first of January, the thermometer fell as low as 25° below zero. All the peach-buds and many of the trees in this region were killed. I expected fruit from my protected tree; but, on removing the straw, about the first of April, the buds appeared to be dead; and, though the tree was less injured than those which were unprotected, not a blossom appeared.

I have doubted whether, under the most favorable circumstances, the fruit-buds of the Peach will survive a lower temperature than 15° below zero.

WHAT PITCH AND ELEVATION OF GLASS ROOFS ARE BEST FOR PLANT-HOUSES.

BY WALTER ELDER, PHILADELPHIA.

During last August and September, I visited many of the rural estates around Philadelphia, where a general collection of foreign grapes are grown in glass-houses. The culture was successful in all, yet more in some cases than in others. There was no mark of disease or insect among them. I thought this remarkable with Gen'l. Pleasanton's vinery, as it was generally predicted that his vines would be ruined by bearing a heavy crop of fruit when only eighteen months planted, and but thirty months from the time when the cuttings were inserted in the soil to make roots. When Mr. Buist announced that fact, in the *Monthly* for September, 1862, it caused as great astonishment among the army of skillful grape-growers, as if a *bomb-shell* had exploded in a camp of recruits; and hundreds of them, with one accord exclaimed: "the vines will be ruined; they will never bear such another crop;" but the past two years they have equalled the best in this neighborhood.

From my own observations, and conversation with many skillful gardeners. I learned the various successes with the different elevations and pitches of glass roofs. On one estate, there is a long vinery, 27 feet wide, with a curvilinear roof 19 feet high, including a brick base, 2 feet: that is, a rise in the glass roof of 17 feet, with a radius of 13½ ft. Near to this is a lean-to vinery, 14 feet wide and 12½ feet high, including a base front wall 30 inches: that is, a rise in the glass roof 10 feet, with a radius of 14 feet. In this house there was double the quantity of fruit upon a given space, that there was in the house with the lofty roof; the fruit was also better and the vines more healthy.

Upon another estate. there is a long vinery, 20 feet wide, and 16½ feet high, with an elliptical roof, the base wall is 30 inches: that is, a rise of 14 feet in the glass roof to a radius of 10 feet. This house had only half the quantity of fruit upon a given space that other vineries near by had, whose roofs had but little more elevation than those of common greenhouses.

Many years ago, the subject of the proper pitch and elevation of glass roofs was discussed in Great Britain. Sir George Stuart Mackenzie advocated the lofty curvilinear and elliptical roofs; but the late Mr. Knight thought that Sir George's elevation was too great, and recommended lean-to houses to be 14 feet wide and 12 feet high, including upright fronts 3 feet: that is, a rise in the roofs of 9 feet to a radius of 14 feet.

Mr. Loudon was of the opinion that the pitch and elevation should vary according to the purposes for which the houses were used.

Those who adopt the lofty roofs, do it to gain more light; but the fierce rays of our clear summer's sun beating upon the houses all day; and the glass magnifying both light and heat, make them too powerful and injurious for the plants growing in them.

Staining the glass blue, green, yellow, etc., has been resorted to, so as to give partial shade to the plants. The glass in the large conservatory in the Royal Gardens of Kew, England, was stained with a yellow-green, and it had an admirable effect upon the plants grown therein. If slight shade to glass structures is beneficial to the plants in England, it must be more so here, for our sun is fiercer and our light is clearer.

I would like to get the opinions of skillful gardeners, and those who have studied the subject, though the pages of the *Monthly*, upon the proper pitch and elevation of the roofs of glass structures for the various purposes of growing plants; and what virtues, if any, there are in staining the glass to give slight shade to the plants; what color is the best, and what proportion of that to clear glass is most beneficial.

[We heartily second Mr. Elder's invitation to hear from those who have practically experienced the varying effects of different pitches of roofs on plants growing under them; or the various tints or shadings of the glass employed. We have ourselves found much of the experience of English authors unfitted for this climate; and it is important that some rule suited to our circumstances should be adopted. That the pitch should vary with the object of the house, is very certain. Mere light alone is of little account in early forcing,—the *sunlight*, direct on the plants, is certainly of great value, and particularly the *morning* sun. One hour of the morning sun on forced plants, being evidently of more use than nearly a whole day of the sun at other hours. No matter how much reflected light we get, or how much artificial heat with it, plants grow comparatively little without direct sunlight with them. Hence for early forcing there seems no doubt to us that a steep pitch that will take the direct rays of the sun is of far more importance than is generally attached to it. For summer plant-houses, or cold graperies, we have always thought the flatter the roof the better. However, we are anticipating the views of our correspondents, for which we shall be happy to make room.—ED.]

PEGGING DOWN FLOWERS.

BY AN "AMATEUR GARDENER."

I have seen in back numbers of the *Monthly*, various methods of effecting this very desirable object. Hair pins, hoop-skirt wire, slit sticks, regular pegs, and, I believe, manufactured zinc articles for the purpose, have been advertised. My plan is more simple than any of these, and quite as effective. I simply get pieces of bast matting, string, straws, pieces of hay, or any thing that will bend without breaking. These are cut into about three or four inch lengths.

To peg down a shoot, a piece of this material is bent around it, so as to make both ends meet, and the two ends are then pushed into the soil with a small dibbling-stick, and the soil pressed about it, as if planting a Cabbage-plant. Quite stiff branches can be secured in the soil this way, more firmly, I think, than by pegs, as a stick pushed down into the soil, has nothing to retain it firmly from drawing back.

This is a very simple thing to write about; but, as it took me many years to learn it, and I know how troublesome making pegs is, I hope the hint will prove useful to many of your readers.

STRAWBERRY HOUSES.

BY CHARLES GRUNEBERG, READING, MASS.

To the valuable contents of the *Gardener's Monthly*, I think it would be in the interest of the Horticultural world of America, to add the few following suggestions on Strawberry culture under glass, and hope you may consider them worthy a place in your columns:

I would describe a new Strawberry House, constructedon three different principles, the use of which has given me great satisfaction, and with which I had great success in England; and if adopted in this country would be of incalculable service, both to amateurs and to growers for market. The want of a house specially adapted to forcing Strawberries has long

been felt by professional gardeners and amateurs. Unprovided with suitable places, the gardener is obliged to introduce his Strawberry plants into his vinery, peach-houses, and even plant-houses, where the conditions of temperature and arrangements of the house are not always congenial to the Strawberry plant, which is impatient of great heat, and requires abundance of fresh air, with plenty of light and shade to the pot.

The result of such make-shift style of business has often ended in partial and inferior crops, and puny and tasteless fruit, not to mention the many serious objections arising from the introduction of Strawberry plants among other fruit trees and plants requiring different treatment.

The Strawberry plant is particularly subject to those pests the Red Spider and Green Fly, so well known to the cultivator, and the trouble and expense of dressing vines, etc., with all sorts of mixtures, is neutralized by the admission of plants, which seem the especial home of those troublesome insects.

With these views, I submit for the benefit of all who may be interested in Strawberry culture, an improved Strawberry House, which is adopted in various of the leading establishments in England, with all possible success, possessing every thing required for forcing this most delicious of all fruits.

The design is of a most simple character, and so arranged as to yield abunance of light and fresh air to the plants, while imparting shade and moisture to the pots and roots. The plants will be close to the glass, accessible from within or without the house. Each plant will enjoy its own roof, and although placed in an elevated position, the drip from one pot does not in any way prejudice that beneath it.

The houses are constructed on the cast-iron bracket principle, and require no permanent fixing. Can be easily erected, disjointed, removed, and readjusted by an intelligent laborer. Each of the sloping lights are made to open, and the front boards can easily be removed. The whole is secured by bolts, nuts, and screws, so as to render these houses movable buildings. They occupy but a small space, and are adapted to every class of garden, in town or country, and can be constructed still more simple and less expensive of wood.

The following engravings will illustrate the idea:

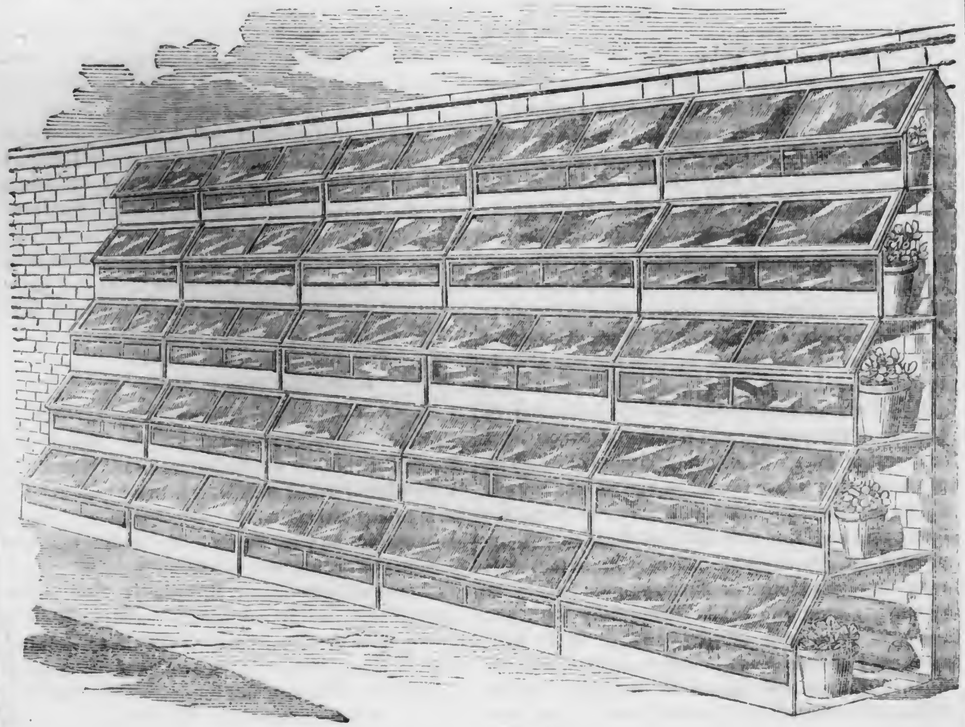

Fig. 1.

Fig. 1. This house is 3 feet 6 inches wide, on plane by about 8 feet high at back, and is intended, for the purpose of being placed against a wall. The means of access to the plants is by raising any of the sloping roof lights, which are conveniently arranged for that purpose. This house is not suitable for intermediate culture.

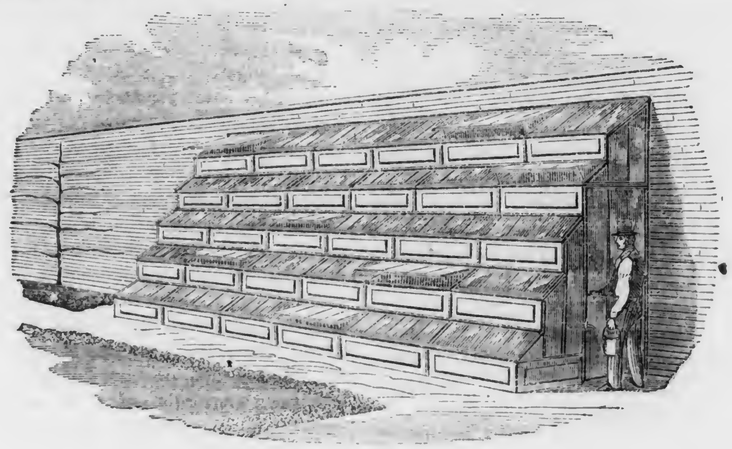

Fig. 2.

Fig. 2. This is in every respect similar to Fig. 1, with the additional advantage of increased width, which affords the means of entering the house for watering and giving such attention as may be necessary. This house is specially adapted for forcing.

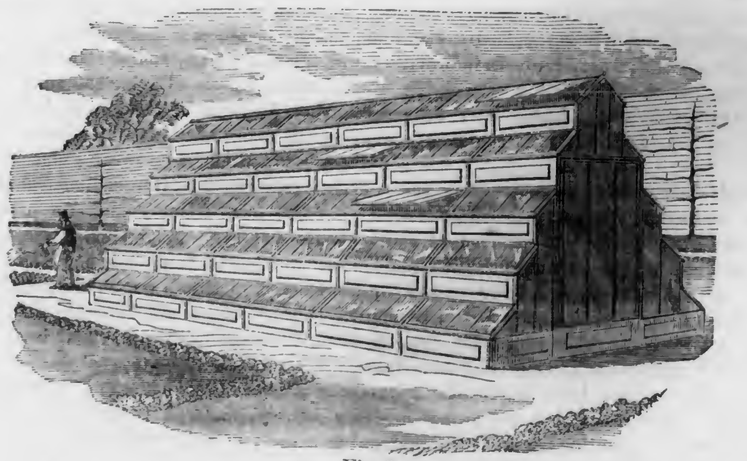

Fig. 3.

Fig. 3. This is of the span roof shape, and can be placed in any suitable open position in the garden, it possesses every advantage of Figs. 1 and 2, with additional space for twice the number of plants. It is quite ornamental, and can be disjointed and readjusted in halves to a wall, forming two houses similar to Fig. 1.

It an important point, that the shelves forming a stage should be left open on the inside. These houses are so compact that the Strawberry obtains exactly the required atmosphere.

Not wishing to fill your valuable columns with too many details, I have given here but an abridged description, and being well enabled and most will-

ing to give any further information on the subject, I shall be happy to do so to any one interested in the subject.

[We are very much obliged to Mr. Gruneberg for this very interesting article, which will command general attention. We were about to direct our readers to the importance of this new idea, when we received our correspondent's note; and, with his extensive experience, as one of the former firm of Weeks & Co., of Chelsea, England, where these houses originated, and from which establishment so many of the principal Horticultural buildings of Great Britain were designed, he is the best one we could have selected, had we a choice, to introduce the subject here.—Ed.]

PEAR CULTURE.

BY ROBERT CORNELIUS, ESQ., PHILADELPHIA.

Read before Pa. Horticultural Society, April 4,'65.

Those persons who have chosen for themselves a home in the country, almost invariably look forward to the time when they will have an abundance of fruit, including the choicest variety of Pears.

They have reason to expect this, as they have seen and tasted some of the best that are grown; and as the Pomological Society aids them in recommending certain kinds for cultivation in different localities, they are encouraged to make a beginning.

After reading the different standard works, and obtaining from friends the preliminary information, they purchase, as they suppose, a very choice selection of trees, which are planted after the most approved method, and success is confidently expected.

The result does not in all cases confirm the expectations, and as the trees do not grow as desired, they reason very naturally that the act of transplanting has retarded the growth of the first year.

The second year, however, having passed by, they are again disappointed, as the trees have not flourished according to their reasonable expectations. They therefore come to the conclusion that the stock could not have been in a healthy condition when first received, or that the proper mode was not adopted in planting; or that the soil or situation was not of a kind suitable for their growth. Feeling a little discouraged, and not knowing exactly what to do, they observe that some trees have grown much better than others.

With a strong determination to overcome difficulties, they again carefully examine their orchard, and, without considering expense, give to each tree a new treatment, which they hope will cause it to flourish.

Having now done all that can be thought of, their expectations are great for the following year. The trees again put forth their leaves and branches in early spring, but are not much larger at the end of the season than of the year previous. Pear culture is therefore considered by them a precarious undertaking.

Although some persons are not successful in the cultivation of the Pear, many have realized their expectations.

The following plans, adopted by one of the latter class, are recommended as suited to this locality:

The mode of operation is to select a piece of ground which has formerly produced good crops, or one which is in a condition to do so. He prepares it by working it well to the depth of eighteen inches; and in case the ground is heavy or wet in places, underdrain, so that whatever water may fall will not long remain, but will pass freely by, and thus constantly renew the supply of air and moisture to the rootlets. No manure is added to the soil immediately before or at the time of planting, if the ground is in the condition above referred to; but the remedy in case the soil is poor, is to top dress, which can be done at any time after the tree has formed new rootlets.

Stocks are selected of one or two years old from the bud, or before they begin to form fruit spurs, and are placed in the ground in the fall, at the proper distance apart, and at about the same depth as formerly grown. During the month of March, or before the buds begin to swell, he cuts from each branch about one-half of the growth of the previous year, which gives greater vigor and prevents a slow growth—the cause of short spurs.

Some trees when young, are prone to produce spurs, and little wood; but by close trimming in the spring, the spurs are not likely to form, and the branches grow a reasonable length.

During the period of growth, the ground is kept free from grass and weeds. and in a loose and friable condition. The trees at the end of the season are all that can be desired. During the winter months no material is permitted to be around or near the tree which would form a harbor for mice, as they select the bark to feed upon when other food is not easily obtained.

In the following spring the tree is subjected to another trimming, which gives it a proper form and a growing condition, and renders a similar treatment unnecessary in subsequent seasons. In trimming, preference is given to that form of tree with one central stem or leader; its length is reduced one-quarter. Each of the side branches is cut so

that the ends shall be below the top of the leader six or twelve inches according to size of the tree; and if other limbs are below these they are shortened in like manner. As there are buds on the upper and lower sides of the branches, and it is desirable to have an erect growing tree, rather than drooping, the branch is cut off just above the bud facing the leader, and not that on the lower part of the limb.

Most of the trees thus prepared will require very little subsequent attention; especially those which are naturally inclined to a regular and upright growth; but some may need a little further care, as, for instance, where the second bud from the end of each branch, and particularly the leader has a strong tendency to be equal to the one above. The growth of this branch should be stopped when a few inches long, and the sap will then be transferred to the branch above.

Many persons hesitate to remove as much wood from a young tree as is necessary for its healthy development; when in fact, the application of the knife, freely, with judgment, and at the proper time, accomplish more for its prosperity than quantities of manure so frequently and improperly used.

When the tree arrives at a proper age, the spurs enlarge, the blossoms set, the fruit follows, and the tree is in a condition to insure its future prosperity.

It gives me pleasure to furnish to the members of the Horticultural Society the above results of personal experience, extending over eight or more years, and I trust that they may encourage others to persevere in the raising of this deservedly favorite fruit.

LETTER FROM WISCONSIN.

BY OAKS.

Through the *Monthly* I have learned to love Meehan, and for a long time have been impressed to say "that same" in ink. It has long been in the mind, and in the inkstand, and was dipped up the first nib full. It is but gratitude due from a stranger friend west of the Lakes. Tree, shrub, and flower shall keep you in remembrance for the blessed gospel you have so faithfully preached, by precept and example. Of what fashion you are in the flesh, I know not, for our palms are yet to touch; but the first of the *Monthly* was a 'line up' whose messages are impatiently looked for when due, and by the evening lamp remind me that I am a kinsman in the sympathies and purposes of a brotherhood, which seeks to add to the world of beauty and bloom. Such is my introduction.

Only six years out of the sanctum, my experience (some of it neither pleasant nor profitable), would add no item of interest to your columns, now so amply filled by "older and better soldiers." I have, however, the same enthusiasm as they, and in my humble sphere, worship God through the varied creations of beauty and goodness which develop under watchful and kindly care.

The gospel of tree, fruit, and flower growing makes slow progress among us: but few conversions. Farmers who found the State aslumber in solitude, have only here and there emerged from pork-eating barbarism. Farms broad and fertile as ever lay out under the sunlight, with mansions of elaborate and costly build, weary the eye which wanders for a relief of shade and shelter. We look in vain for the clinging vines, the groups of trees, and the garden, so suggestive of luscious fruit, through summer and autumn. No child will retain a holy memory of such a homestead; no bird seek rest for a weary wing, or warble a note where there is no whispering leaf to join in chorus. One thing is true, however, in a fruit-yard, or before a berry-cake at the table, such people have a *cultivated* taste for good things, and a *great capacity* for their enjoyment!

Men scoffed when I began to 'potter' with these things; but it has paid in money—that they can understand. It has paid in a higher and nobler sense,—that they cannot understand. My head is touched with grey, but each returning spring shall be honored with seeding and planting, until thousands of trees, evergreen and deciduous, in the winters and summers of coming years shall be monuments, whose "in memory of" shall grow brighter in the baptisms of rain and dew, and the lingering benizons of setting suns.

Come and sit with us, Meehan, under own vines, and see how we have cared for the children whose germs your own hands consigned to our keeping. There is many a feast under seal in the cellar, and the promise of more from the window. You will be welcome

THE PAULOWNIA IMPERIALIS TREE.

BY CHRONICLER.

Upon the rural estate of S. G. Sharpless, Esq., on the Philadelphia and Westchester railroad, one of the finest in Chester county, there is a *Paulownia Imperialis Tree*, growing very thrifty; it forms blossom buds plentifully every year, but never blooms; and it is supposed that the cutting winds of winter so injure the buds that they cannot expand in spring. The situation is very lofty, and the tree grows upon the North-western slope. Have any of the readers of the *Monthly* noticed such cases with the Paulownia, growing upon bleak situations?

The Gardener's Monthly.

PHILADELPHIA, JUNE, 1865.

☞ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

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HARDINESS OF TREES AFFECTED BY SUMMER CAUSES.

It has often been the subject of remark among intelligent horticulturists, that there must be some local circumstances, independent of mere temperature, that have a great influence on the power of trees to resist low temperature. We have ourselves frequently been puzzled by conflicting statements, and we believe been led into errors by attributing effects to wrong causes.

For instance, in Mr. Sargent's admirable edition of "Downing's Landscape Gardening," is a table, giving the hardiness of many rare trees. It astonished many of its readers by the fact, that some things should not prove hardy in places well known to be more favorable to evergreens, than other places in which the same plants were reported unhurt. One of the most remarkable statements in connection with this table, is one credited to Mr. Meehan, that the Deodar Cedar is hardier in wet places than in dry ones, which he based on the fact that one on his grounds, in a low wet place, passed through the winter unhurt, when others in dry ground were entirely killed. We are now satisfied that Mr. Meehan was wrong in the *general principle* he would deduct from his facts; and think we now understand why his tree, in his particular instance, stands better than others did in dry places; and we also believe we can account for the discrepancies that apparently occur in the other instances we have referred to.

The life principle in plants is very much like that in animals. The precise power of life we call vital force. When this force is very strong or otherwise, we say the plant or animal has a strong or weak constitution, as the case may be. Weak constitutions are more easily carried off by adverse circumstances than stronger ones; and in plants as in animals, those that have naturally weak constitutions will be killed by a severe frost, when stronger ones of the same species, side by side, will pass the ordeal unscathed. Thus it follows that no precise rule can be drawn from trials with individual plants in widely spread localities. The general result only will establish the rule, and no one should decide that a rare tree is not hardy because his single experiment resulted in failure.

But, besides this natural difference in individual constitutions, a plant frequently has its vital force impaired by external causes,—and as an enfeebled system in the animal kingdom cannot retain its lamp of life alight exposed to rigorous cold, so neither can vegetable life. Almost all diseases that attack plants weaken it in this way, and cause many to die in hard winters.

Suppose it to be a bed of seedling Pears, attacked by leaf-blight, in July. The old leaves fall before they have fully performed their functions; new ones at once form, but so late that they cannot fix carbon enough or in such condition as to evolve sufficient heat to resist severe cold,—so the seedlings are nearly all killed by the winter's frosts. Properly ripened the pear-wood will endure any amount of cold our winters bring with them.

So with the Raspberry and Blackberry; where the black or red rust, or some other form of mildew avoids the plants, and they retain their foliage to ripen in due course of nature, they never winter kill, so far as our own observation has extended; but where they lose their foliage early, they must have the same protection as a delicate body, and artificial warmth by burying under the earth be afforded it, or the variety will be classed as tender.

But independently of any disease, whatever interferes with the proper maturity of the wood,—carbonizing we believe is the chemical term,—renders the plant proportionately tender. One of the worst of these enemies to a constitution that is to endure extreme cold, is *dry weather*. If a plant suffer from drought, it will be proportionately tender under extreme cold. Plants, especially evergreens, do not show immediately that they suffer in a dry time. Hundreds of plants get through the "dry spell" without any external indications of what they have had to undergo. The winter tries them, and in spring we see the effect.

We need not detail the numerous observations that have led us to this conclusion. We have followed them so closely that we have no doubt of the correctness of the deductions; and are sure our readers once on the track, can verify the theory for themselves.

The case of the Deodars can be understood in this way. Plants in a dry soil, or in a very warm place, no doubt had their vitality injured, while

those in a moister spot went through the summer growing healthily, and were thus in condition to resist severe cold. It was not that a wet soil, because it was wet, was best for the Deodar; but that the dry soil happened to be too dry for the plants, in comparison with the other. In short, it was disease or weakness killed those in the dry soil, and not moisture merely that saved the other in the wet one. No doubt in wet soils, sometimes, there would be as much fatality, when the summers were favorable to dry soils, as in the contraries noted.

TRANSPLANTING IN JUNE AND JULY.

It is not easy to do all the work planned out in every garden within the short planting season of spring. Wet weather, and other unforseen circumstances, frequently delay things; that, work as one will, the time goes by before we are half done. With a little care, many things may be very successfully transplanted in June and July, and a season of growth thus be saved to us. How to do this successfully, we propose to show in this article.

Imprimis, as the old books used to say, the roots must be carefully preserved from drying. Suppose it is, for instance, a hedge of Arborvitæ or Norway Spruce to be planted. As fast as they are dug up they should be packed on the wagon ready to be hauled away, and arranged in such manner that the tops of the one protect the roots of the other. For plants under four feet high, it is not necessary to have a ball of earth with the roots, if, as we before said, care be taken to keep the small fibres from drying. This is the chief use of a ball of earth in any case; and for moderate-sized trees, where extra care is necessary, there is no doubt that to have a ball of earth saved with the tree, is one of the most perfect ways of keeping young roots fresh: for laborers, however well intentioned, can very seldom be made to understand the injury to the young fibres of a very few minutes exposure.

Having the plants packed and secured from drying, on the wagon, and drawn to the place for transplanting, prepare a large bucket or tub of water, that will hold about half a dozen at a time, into which dip about that number,—keep this tub near the workman as he advances. Lift the plants from the tub to the spot prepared for them, and let another man cover at once. While one man is covering, let another, with a paving rammer about two inches in diameter, punch the earth in solidly about the roots, and there will be very little danger of losses. We have seen hundreds planted in this way up to the middle of July without a death,—after that, indeed, they are often done, but not with as great success as before that time.

Many evergreens, to be moved in this way at this time, will have their new growth pushed out perhaps six inches or a foot in length. Cut all these young points off, down to near where they push from. They will make many new buds at the base, which would not be but for the pruning, and will really be handsomer trees than if they had never been touched.

Deciduous trees may be moved up to July as successfully as evergreens. The same care must be taken to keep the roots an instant from drying; and all the young growth must be cut off, down to within a few inches from where it started from. The soil must be rammed in firmly about the roots, as in the case of evergreens,—and they succeed as surely and as well.

This plan of moving trees at this season is not adapted to the commercial way of sending them long distances in cases; but to any one wanting to move them from one part of his grounds to another, or to any one living within driving distance from a a good nursery, there will be found many advantages in the knowledge that planting can thus so late be done.

We do not know whether we might not safely say, that some things usually considered very hard to get to grow, do much better planted now, in this way, than at the usual planting season. Certainly the Holly, Kalmia, and Rhododendron do remarkably well under this system. One of the great points, however, must not be forgotten, namely, to cut back the young growth, before referred to, which would otherwise wither and exhaust the plant. The Holly may have even much of its old wood cut away. It pushes out beautiful young shoots in August, and moves again as easy as a willow tree.

THE PENNSYLVANIA HORTICULTURAL SOCIETY & THE PRESIDENT'S MURDER.

We have no report to make this month of the last exhibition of this society. Held at the time when the sad news of President Lincoln's murder was wringing the hearts of all loyal men, it was resolved to adjourn the consideration of all business to the next meeting.

Almost every public body and public journal, no matter how removed their general objects may be from affairs of State, have felt impelled to express their indignation at the enormous crime, and their sorrow for the loss of the great and good man so suddenly taken from us; and, though avoiding, as

we have ever done any thing not strictly horticultural,—not even referring, customary as it is in agricultural and horticultural works, to our own family bereavements and afflictions,—yet we cannot permit the *Monthly* to stand alone on this memorable occasion, non-responsive to the general sorrowing of the nation.

There are, we know, no more zealous lovers of their country and their fellow man than the horticultural community; but they are not given to an ostentatious display of their feelings or opinions, nor is their zeal untempered with discretion.

We truly believe, that for genuine charity to opposite opinions, no class excels the horticulturist. Though ourselves long an advocate of human freedom and human rights in their most liberal sense, we have never obtruded our views on our readers out of place in this journal; but in our private letters to our Southern correspondents, before the rebellion, we never hesitated to give them our free opinions when the occasion called for them; and they were invariably received with the courtesy and respect we expected from the fraternal spirit of horticulture. The many hours we have employed in the earnest endeavor to ward off, by calm reasoning the bitter cup we have had to taste the past four years, we now look back upon as amongst the best spent days of our life. It taught us that the great Horticultural body of the South was far in advance of other portions of the community. The great majority of them we found earnest lovers of the Union, and opposers of a course they mostly believed would be but a fruitless civil war. Our correspondence with the South was very extensive; but we are proud to say that we knew of but one of any eminence who took any high part in leading any State out of the Union; and we have with some interest watched the course of events in connection with our former friends there; but we have not heard of an instance of one of any consequence who willingly entered the Confederate ranks.

We refer to these matters here, because we think it gives horticulture a new claim on the country. The nation—events prove—has to be forever one, and strongly united. Union and good feeling will naturally come first between those who have been least disunited, as the horticulturists of the two sections always were.

Peace and Union are emphatically the emblems of Horticulture. It is horticulture that directs the beating of the sword into the pruning-hook,—it is she who digs the grave which buries the hatchet,—she who grows the olive branch, and grafts the sour apples of discord with the better fruit of love, brotherly feeling and good will.

In our blood-baptized country, we look to gain as great glory in the arts peace as we have achieved in those of war; and mournfully entering into the nation's loss to-day, and through the sad past; we yet think we see the dawn of better things, for which, as horticulturists we would prepare ourselves, that we be not behind our fellow citizens when the great festivals of prolific Peace shall come.

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.

Grape-vine Insect.—We received from Messrs. Perry, of Bridgeport, Conn., an account of a singular insect, which we could not recognize by their description. We asked them to send us specimens in a quill. We opened a section, and could see nothing. Fearing he had escaped us, we hesitated to open the others, and sent them to our friend Jacob Stauffer; but, as will be seen, with no better luck in catching the "mysterious stranger:"

"Yours, and your correspondents, came to hand. Always in hopes of finding something new, I got my microscope ready—laid out a clean white paper, guarded against any hop, skip, or jump, took out of the quill the first paper stopper carefully, examined, unrolled it; took out another stopper, looked carefully, unrolled that, and then found a few small fragments of leaves; put them on my microscope, turned them and looked; took out more paper stoppers, unrolled them, split the quill; but, alas! found no trace of their prisoners, either dead or alive.

As they give no kind of description, as to size, shape, or color, or any clue that would guide me to even guess at what they might be; the only thing stated is that "they perforate the leaves, cut the young wood, causing it to turn black;" "they will jump away from you when you let them out, if you are not careful." The *jumping*, together with the rest, might apply to the "Flea-beetles," known to conceal themselves during winter in dry places. They lay their eggs on the leaves upon which they feed, in early spring. The larva of the smaller kinds burrow into the leaves, forming winding passages in the soft pulpy substance, on which they feed, and in which they complete their transformations. The well-known Cucumber Flea-beetle (*Haltica cucumeris*, or *pubescens*, of Kiger), is a

is a most destructive species. These infest other plants having fleshy and succulent leaves. The leaves become brown, and dry, and of a rusty appearance. The Grape-vine Flea-beetle is the *Haltica chalybea*, of Kiger, now called *Graptodera chalybea*, meaning steel-blue, being of a metallic blue or greenish color, 3-20 of an inch long, of an oblong oval form. Mr. David Thomas gave an account of them in the 26th vol. of *Silliman's Am. Journal of Science*, in 1831, found on the vines in Cayuga county, N. Y., also New Haven, Conn., and since in numerous places. I have quite a number of insects of this family illustrated in my collection; but as I do not know whether the insect referred to was a beetle, (they call it bug in one place), I shall say no more, but simply call their attention to the writings of T. Harris, on *Haltica*. I have had other insects sent me from Grape vines not mentioned by Harris.

P.S—After my search, I thought on the date, first of April,—All Fool's Day,—but rather guess the paper stoppers made no barrier to their jaws. If they can cut young wood they can cut paper,—at least they "cut and run" before I got them,—I should say did not get them. Try it again friends Perry."

Errors of Nurserymen—*C.* writes: "Are Nurserymen generally honest, or are they almost universally the reverse? A chapter of my experience with them, strongly inclines to the latter.

First—Sent to Seneca Lake for "First-class Apple and Mazzard Cherry stocks." Apple stocks turned out about as thick as Rye straw, and Cherry stocks proved common sour or pie.

Second—Geneva: "very choice dwarf Pears." When they came they were two feet high, and poor at that.

Third—Rochester: "Best Pears we ever grew." Poor scrubby trees, and miserably taken up. Excuse (or complaint), "too dry to take up trees well."

Fourth—Rochester: enclosed money for flower seeds. Received none. Wrote letter of inquiry. No answer.

Fifth—Poughkeepsie: enclosed $1 for Strawberry plants. Received a circular. Sent letter of enquiry. No answer.

Sixth—West Chester: "Maxatawney Grapevines; cultivated with extra care for two years." Was rewarded with several good bunches of Isabella.

Seventh—Elizabethtown: received Golden Arborvitæas two feet high, bare of foliage half their length. Sent for Irish Junipers. Complained about the appearance of the Arborvitæ, and hoped to receive first-class plants in every particular. When the plants arrived they were bushy enough, but three-fourths of them were double-stemmed.

Are we to bear and 'grin' with such fellows, or shall we expose them in our journals?

[We have so often given reasons for not publishing such letters as this, that we are surprized that they still come to us. As this one does not exactly mention any names, we decide to pass it, for the purpose of showing why it is improper for us to publish them.

Aside from the circumstance, that in publishing a horticultural journal, we never undertook to make it a "police intelligencer;" and apart from the fact that we have no legal education, and consider ourselves thoroughly incompetent to sit in judgment on criminal cases; we are great sticklers for abiding by the law, so long as it is the law. We have all seen the terrible results of a community trying to redress fancied or anticipated wrongs, in defiance of law, during the past four years. The law of Pennsylvania is, that if a citizen is dishonest, as our correspondent says he is inclined to believe people he has been dealing with are, the courts are open to the complaints; and a public journal is not the place to make them in. We not only want to abide by this law, but we think it is a good law. There is then a chance for both sides to be heard.

It has seemed to us though that people who make these complaints have themselves often to blame. They are hasty in their dealings with strangers, and as hasty again to judge harshly, when they get disappointed. Our correspondent's note affords examples of this. Does he believe that any nurseryman, with the commonest sense of business—not to say of honor—would *deliberately* send him an Isabella for a Maxatawney grape? We could then understand that he would not only be dishonest, but a fool also to his own interests. That a man might be guilty of culpable negligence, is quite possible, without involving his honesty. Such faults bring their own punishment. The most reliable men will get the best business,—the careless man loses custom and caste.

Our advice to our correspondents of the nursery-persuasion is, when they complain to us about being shabbily treated by rascally customers, "look out to whom you sell: do not sell to those you think will cheat you; and don't bother our readers with your complaints;" and when, on the other hand, buyers complain of bad treatment from nurserymen, we offer them the same efficient medicine, "don't buy of them any more."

Reply to Query Concering the "Mating of Birds.—In the May number of the *Monthly*, "*Juvenis*" asks whether "birds really choose new partners every year? or do they mate for life?" I will attempt to answer this query to the best of my knowledge; but it will be well to inform "*Juvenis*" in the commencement, that no absolute certainty can be attached to the remarks, as I have no way of proving what I assert.

It is believed by most persons who have paid attention to the subject, that the habit varies in different species. Thus the rapacious birds (*Raptores*) are believed to retain the same mates through life. Regarding the other families, nothing definite is known. Persons have tried the experiment of catching the birds alive, and tying fine wire around one of their legs, in order to identify them on their return. But we have never heard of the return of any of the birds marked thus, and they either die or manage to get the wire off of their legs in some way.

"*Juvenis*" says that "all writers that I have met with so far, speak of birds chosing new mates every year." They do this merely for the convenience of the phrase; as it looks very well to say, that "after their return they begin to look about for a mate, with whom to share the arduous duties of incubation," etc.; but, as I before remarked, they have no way of *proving* what they assert. We cannot follow the birds when they leave us at the approach of winter for a warmer clime, and again follow them on their return, keeping a sharp eye on the same pair, to ascertain whether the male really chooses another mate, or keeps the same one. No; it is absurd, and so long as we cannot do this, the question must remain unsolved.

"*Juvenis*" says he is "nearly sure it is the same pair,"—referring to a pair of Cat-birds that build in a lilac bush near his window. I would like to know how "*Juvenis*" is "nearly sure," as we can assure him that all Cat-birds look exactly alike (when in full plumage), act in the same manner, and *attempt* to sing in the same manner also. Therefore, is it not probable that another pair of birds, finding the position a favorable one, take possession of it. and build their nest there? I do not give birds credit for intelligence (or "instinct") enough to return to the same place year after year.

Hoping that "*Juvenis*" will turn his attention to the *real history of birds*, rather than trouble himself with vague doubts about their mating,

I remain, Yours, &c., J. P. Norris.

Birds and Bugs.—"*Q.*" says: "I am a great admirer of birds, and have protected them till they make my place 'their home' and *no mistake*, for they make themselves 'at home' with every thing I have, (fruits and seeds), till I hardly know which most to favor, birds or bugs. I lean towards the birds, and should be much obliged if some of your experienced correspondents would give us their best means of preserving fruits and seeds from birds. I can scarcely ever see a ripe Strawberry for the Cat-bird, or a Cherry for the Robin; and this spring the Sparrow has entirely destroyed a large bed of Evergreen seeds, in spite of every scheme I could think of to keep them away. Their depredations were worse than mice, which I can secure by poison; but I cannot bring my heart down to poisoning the birds."

Downing's Ever-bearing Mulberry—*John.*—There is no difficulty in propagating this, either by root-grafting on the white, or Italian black, or by layering strong young shoots in July. We like the last plan best. No doubt they could be raised by eyes or cuttings, taken off in the fall,—but we have never tried them that way.

Evergreen Cuttings—*R. B. Geneva, N. Y.*—"I am desirous to raise a quantity of Evergreen cuttings this fall, and am informed that July and August will be best for this. Is this general experience?"

[Nurserymen propagate them in a general way from October to December, usually putting the cuttings in bottom heat. You do not say what kind of Evergreens you wish propagated. Almost all Evergreens can be propagated very easily from half-ripened wood, which would be about July, August, or September, with different kinds; but they have to be kept close, shaded and watered; and on an extensive scale, we do not think on the whole, the season is so good as later.]

Azaleas not Flowering—*Mrs. M, P. Y., Cincinnati, O.*—"My Azaleas grew beautifully last season, but I was disappointed in their blooming. The flowers were very few. After potting early in spring, they were kept in the greenhouse till June, then put out under the shade of trees. They have in other summers been more exposed to the sun. Was there any thing wrong in last year's treatment?

[The Azalea makes its flower-buds at the end of the growing season. That is the critical time. It will either make leaf buds or flower buds then, according as circumstances favor. Moderate dryness with plenty of light is most favorable to flower-buds. Your Azaleas, in addition to the shade, were probably kept rather wet at that time, and not favorable to that arrested stage of vegetation so necessary to promote flower-buds. Try them this year in a lighter place.]

The New Fruit-box.—*J. A. Churchman, Burlington, N. J.*, writes: "In your notice of our Fruit-box, in the *Gardener's Monthly*, just received, you have made an error in the name of the patentee, who is Mr. Edmund Morris, of Burlington, from whom some of my friends and myself have purchased the exclusive right to manufacture for the United States. The name of the patentee is a matter of little consequence, further than that some enquirers, seeing your kindly notice, may address J. Chambers, instead of myself.

The Effect of the Moon on Vegetation—*F. G. H., Terre Haute, Ind.*—What effect, *if any*, has the moon upon vegetation? I have never yet seen any thing definite written on the subject. It may be a simple question to you, but there is no doubt something interesting about it. We are all aware that the moon has great effect upon human conditions, why should it not have some influence upon plants?

[*Moonlight* has some influence on vegetation; but not, we think, sufficient for any practical result to the horticulturist.]

Insects—*T. H., Kinderhook, O.*—Enclosed find a branch of an Apple-tree, infested with some disease with which I am not acquainted. Will you please inform me, through the *Monthly*, what it is, and the remedy? I have one tree in my orchard that the branches are covered with it.

[This is but a form of the common white scale. The best remedy is to cut off in the winter and burn all the small twigs covered with it, and then wash the larger branches with whitewash and sulphur, or weak lye made of soda and wood ashes.]

The Summit Raspberry—*O. T. Hobbs, Randolph, Pa.*—"Last week I sent you a plant of the Summit Raspberry,—the sweetest and best Raspberry, and probably the only one of the kind. It sprang from earth ten feet deep. Give it a fair trial, and your opinion at the proper time."

Pruning Peach Trees—*T. H., Kinderhook, O.*—Will you, or some of your correspondents, describe the manner of pruning the Peach horizontally to a trellis, as practiced by Mr. Simpson, in the April number of the *Monthly*. It strikes me as if that mode of pruning would be successful in northern latitudes.

Improved Stock.—In our advertising columns is an advertisement of Durham cattle, of the celebrated breeds of James Gowen, Esq., at Mt. Airy. Being a near neighbor of ours, with the cattle continually under eye, we might say something of their excellence; but the large attendance at every annual sale, from all parts of the United States, has made a reputation for them which renders any thing we might say superfluous.

Books, Catalogues, &c.

Woodwards' Country Homes. By Geo. E. & F. W. Woodward, New York.

All who propose to build new country seats, or remodel old country homes, will find this beautiful little work of Messrs. Woodwards a very useful aid. It gives designs and plans of about twenty different structures, which have been constructed by them in different parts of the country, as illustrations of the advice they give.

The execution of the work is in excellent style, and in itself makes it a pretty addition to the Parlor library.

Proceedings of the West Jersey Fruit-growers' Society, for 1864–5.

This interesting document has been some weeks on our table. Perhaps the advantage is on the side of the delay, as, West Jersey being particularly celebrated for its Strawberry growers, our notice deferred till the now Strawberry season, will enable us to write what we have to say with more interest.

A meeting was held at Moorestown on the 11th of June, at which the strawberry received marked attention. A very fine show of Strawberries appear to have been exhibited. It is singular to notice how reports of Strawberries vary with the locality. From this report we find many not in much repute in other places, highly praised; while others, well thought of elsewhere, have here no character to lose. Downer's Prolific "has proved one of the most valuable market berries;" while of French's Seedling, "Ellwood Boston stated, that his best berries sold from 40 to 50 cents per quart throughout the season, and one bed had returned him as much as two of Downer's. It was highly spoken

of by all who had fruited it;" from which we should say, if Downer's was *one* of the *most valuable*, this one must be a "valuable" of a very distinct race. Triomphe de Gand was not considered worthy of cultivation.

Voting on the best varieties for general cultivation, resulted: French 15, Downer's Prolific 15, Russell's 11, Cutter 14, Hovey and Lady Finger each 7, Leed's Prolific 6, Wilson's Albany 4.

Finding Lady Finger and Hovey a tie, they were voted on by the whole, when Hovey was elected by 2 to one over Lady Finger.

From the report, we gather that in four townships, there are 488 acres of Strawberries grown for market, yielding 27,924 bushels, and producing $164,633 60,—less than 57 bushels per acre, and very far below the estimates some have made that an "acre of Strawberries well managed, should produce as great a weight as an acre of Potatoes." The produce per acre would be about $330 per acre, which, after paying labor, commissions, interest on capital invested, and so on, leaves a comfortable profit, but nothing extravagant.

Of Raspberries, 30 acres in Burlington average 40 bushels to the acre, average price 30 cents per quart.

Blackberries—100 acres in Burlington township,—produce about 50 bushel to the acre, price about $4.80 per bushel.

Currants, Gooseberries, and Native Grapes appear to be but an amateur amusement in West Jersey. Apples do very well: Early Harvest, Sweet Bough, Maiden's Blush, Hagloe, are the most popular early varieties. Porter and Gravenstein for mid-season. Smith's Cider, Cooper's Redling, Roman Stem, Baldwin and Ridge Pippin. for winter.

Pears not much grown as yet for market. The Peach was once the staple fruit crop; then generally failed; is now returning to its original productiveness. Wood-ashes is the best fertilizer. Potatoes grown betwen the rows. A precarious, but very profitable, when successful, business.

The President's, (Wm. Parry), address is a thoroughly practical document. Mr. Parry has done much to make popular attention turn to the great advantages New Jersey possessed in many respects; and this address is just of this character. Hale's Early Peach he praises highly, as being entirely ripe and out of the way before Troth's Early comes in.

One of the most valuable papers we have ever read, is contributed to the "Transactions" by J. S. Lippincott, of Haddonfield, N. J. It is entitled "Atmospheric Humidity as a Protection,"—and viewed practically in its relations to Grape culture. It is a scientific paper, and unanswerable, we think, in its deductions, and may be read profitably by every fruit-grower in the land. We should do injustice to the society by republishing the paper entire, when the whole transactions may be had for the annual membership fee of one dollar, of the Treasurer, Samuel Stiles, Moorestown, N. J. At a future time we shall, however, give an analysis of the paper, for the benefit of our readers.

Monthly Reports of the Department of Agriculture.

When this Department was first proposed, we opposed its establishment, because we felt that it would never be of any commensurate advantage in a government where the intelligence of the people is usually far ahead of their rulers; however useful such an institution might be where the government was supposed to be the "father of the people." Our Agricultural contemporaries, however, like the Israelites of old, who were clamorous for a "King to rule over them," got their wishes, and now, like those self-same Israelites, rue their bad bargain; still insisting, however, that it might be a good thing in other hands. We very much doubt whether it would be any better "any how." We have had our fun out of its blunders and follies so often, that, fearing we should be classed as pursuing the poor panting thing from the sheer love of hunting, we have given over the chase for some time back, resting on the fence, while our contemporaries have enjoyed the sport in their own way.

But, taking up a number of a recent date, with a chapter on "Grasses" in it, we feel like taking to the saddle and the field again.

We were surprised to find in an article on grasses "generally cultivated," so many important and popular ones omitted. "Blue-grass," "Orchard-grass," "Red-top," and "Timothy," being the only ones referred to.

But the most amusing paragraph is the following:

"In some parts of the United States, there is a coarser grass than this cultivated, called the English Blue-grass. It is an English variety, as its name indicates; but like most of the grasses of that country, it is ill adapted to such a dry climate as ours!"

Now it so happens that this English Blue-grass [*Poa compressa*), in England is a worthless grass, confined almost entirely to old walls, ruins, and barren ground. In this "dry climate of ours" it does far better than in its own country; so much so as often to aspire to the position of a 'hay grass,' which it never dares to do there.

But the fun is to read that most of the English grasses are ill adapted to a dry climate like ours, when *all* our popular grasses are natives of England.

The Kentucky Blue-grass, also called Pennsylvania Green-grass, (*Poa pratensis*), is a native of England; Orchard-grass (*Dactylis glomerata*), is an English grass; Timothy (*Phleum pratense*), is also an English grass; as is also Red-top (*Agrostis rubra*). Many other good grasses, omitted by the writer, are English: Rye-grass (*Lolium perenne*), Vernal-grass (*Anthoxanthemum odoratum*), Bent-grass (*Agrostis alba*); and not a single instance is there of an American species being popular as a cultivated hay grass.

This chapter, like many that appear in these papers, is evidently a specimen of cheap cookery, made up of ingredients found in English works, with a few American names of men and States, thrown in as spice and other 'condiment.' It reminds us very much of the old attempt of a long-headed animal to pass for a lion. It looks very well with merely the skin on; but these attempts to address an intelligent public only expose it by its 'bray.'

Domestic Intelligence.

Native Grapes.—The following paper, from Vol. IV., page 140, of "Proceedings of the Essex (Mass.) Institute, is by D. M. Balch, a gentleman of considerable scientific acquirements, and will be read with much interest by all engaged in Native Grape culture.—Ed. *G. M.*]

"It has been been proved from numberless trials and disappointments extending over a long course of years, that the wine grape of Europe (*Vitis vinifera*), cannot be cultivated in the States east of the Rocky mountains, with success, except under glass, both fruit and vine in open air culture being sooner or later destroyed by disease, even in latitudes where the fruit would otherwise be perfected.

This much to be regretted failure is due neither to the cold of winter nor the heat and aridity of summer, but probably to the great and rapid fluctuations of temperature peculiar to these States; for on the Pacific coast, where the climate is far more equable, most European grapes flourish luxuriantly, and the bearing vines of California now number millions.

Such being the case we in the East must turn for our table fruit and wine to the various indigenous wild grapes, (*Vitis labrusca, æstivalis, etc.*) healthy and hardy plants, which grow spontaneously, varying in kind with the climate, from Maine to Texas. The fruit of these wild vines is in most cases of the very worst quality, being acid, astringent and of a peculiar musky odor and taste, the so-called foxiness; but that horticultural skill and patience, by which have been elaborated from the common choke-pear all our well-known varieties, approaching perfection in quality, and ripening throughout the entire year, is being applied to the wild grape, and the results of the few past years are astonishing. The goal of perfection in this case is still far distant, but we have many good and some excellent varieties; and the number of these is being yearly augmented, so that it is by no means improbable that many grapes, hitherto popular, will be gradually discarded as others of better quality or habit arise to fill their places: I refer to the Isabella, Catawba, Hartford, &c., in all of which there is large room for improvement.

To be of value as a table fruit or for wine, a grape must contain a sufficient quantity of free acid, and sugar enough to temper, modify, or partially disguise this acid, so that the juice shall not be flat and insipid, but vinous and sparkling. In the case of table grapes, the minor considerations of size, beauty, flavor, thin skin, deficiency of central pulp, etc., are of great importance; but the first point to be ascertained in a wine grape is the quantity of free acid and saccharine matter it is likely to produce in favorable circumstances.

To ascertain which (if any) of the native grapes ordinarily ripening in this vicinity, was best adapted to wine-making, I have this autumn analyzed the fresh must of many varieties. I had also another object in view, viz.: to ascertain if the table adapted to Oechsle's must-scale by Gall, from numerous analyses of European musts in 1851, '52 and '53, were applicable to the must of our native grapes.

The method of analysis in all cases was as follows:—The grapes were gathered when perfectly dry, pressed, and the juice strained through linen. The specific gravity of this clear must was taken by weight in bottle with perforated stopper; a portion of must was diluted with 50 times its bulk of water and sugar contents ascertained by Fehling's method, (Annalen der Chemie und Pharm., Bd. 72. S. 106.); this method is very accurate if carefully performed; finally the free acid in a weighed portion was neutralized by a solution of caustic soda, of such strength that 1 c. c. equalled .00825 grm.

of Tartaric acid (C8 H6 O12). All the free acid in must is not Tartaric, but in calculating results we can consider it so with small inaccuracy. The per centage results obtained are as follows:

Variety. Time of gathering.	*Sp. Gr.*	*Sugar.*	*Acid.*
Rogers' No. 15, Sept. 5,		9.20	
Do. do. " 26,	1.0783	16.47	.66
Do. do. Oct. 5,	1.0839	*17.90	.70
Delaware, "	1.0896	19.70	.70
Do. "	1.1021	20.63	.65
Hartf'd Prolific, Sep. 26,	1.0721	15.01	.43
Concord, "	1.0615	11.83	.86
Adirondac, Oct. 5,	1.0714	14.00	.28
Allen's Hybrid, "	1.0780	*16.20	.59
Union Village, "	1.0556	*10.00	1.21
Rogers' No. 4, Sept. 26,	1.0749	15.46	.61
Do. do. Oct. 5,	1.0819	*17.30	.65
Do. No. 22, Sept. 26,	1.0723	14.56	.76
Do. do. Oct. 5,	1.0796	*16 70	.59
Clinton, Sept. 26,	1.0688	13.77	2.40
Alvey (Hagar), " 21,	1.0640	10.37	2.60
Do. Oct. 5,	1.0734	*14.70	2.02
Franklin, Sept. 5,	———	8.77	———
Do. " 21,	1.0610	11.20	2.16
Rogers' No. 3, " 26,	1.0734	14.70	.66
Do. do. Oct. 5,	1.0749	*15.30	.47
Do. No. 19, Sep. 27,	1.0680	13.65	.81
Do. No. 1, Oct. 5,	1.0665	12.60	.62
Do. No. 9, Sep. 21,	1.0680	13.41	.87
Do. do. " 26,	1.0742	15.00	.57
Do. No. 33, "	1.0572	11.70	1.01
Do. No. 41, "	1.0749	15.63	.76
Do. No. 30, Oct. 5,	1.0630	*11.80	.84

The sugar per centage marked * in the table were not obtained by analysis, but are Dr. Gall's for the corresponding densities.

From these analyses native grapes would seem to be divided into three classes:—

1st. Those in which the proportions of acid and sugar are well balanced; as Delaware, Rogers' 4 and 15, Allen's Hybrid, etc.; these grapes should yield good wine.

2d. Those in which the acid is deficient; for instance, Adirondac, Hartford, &c.

3d. Those in which the great excess of acid overpowers all else, and renders the fruit nearly uneatable; such are Clinton, Franklin, &c.

[*To be continued.*]

Planting Grapes with Corn.—The cheapest plan of setting out a vineyard and working it the first year in some paying crop, is to select some suitable ground and plow it deeply three or four times—the oftener and the deeper the better. Select some field not liable to wash, as elevated as possible—though this is not indispensable; free from stumps, so that there is no obstruction to plowing the ground all deeply and thoroughly. Ground lately cleared of trees is not fit for grapes, because the roots prevent deep cultivation—an indispensable accompaniment to successful Grape culture. Harrow the ground fine. Lay it off in rows and cross-rows 8 feet apart, so that they may run, if possible, North and South, and East and West. Dig large, deep holes for the vines, and plant them with great care, having the roots covered five or six inches with lively, rich soil, and leaving a couple buds of the cane just above ground.

The vines should be planted before the buds begin to push—say the first of April, in this climate, (Mo.) or sooner, depending upon the season.

The first of May lay off the ground for corn in rows, four feet apart,—that is, opening a slight furrow midway between the rows of grapes both ways. Now plant your corn four feet apart, as in common field culture, only omitting to plant a hill where the grapes are planted.

Go into the field in proper time with the cultivator and hoe. Work the corn both ways all summer with the cultivator—, or, what is better, the Knox Horse Hoe—not running so deep as to interfere more than you can help with the roots of the corn, and you may rely, not only upon getting a big crop of corn, but a large growth of vine.—*Rural World.*

Sugar from the Silver Maple.—It is a fact, which I think is not generally known, that the Silver Maple is valuable for Sugar making. I have been familiar with the manufacture and use of sugar from the Sugar Maple, and pronounce this as good as the best quality of Maple syrup. It had granulated at the bottom of the dish, showing that it only needed a little more boiling to make hard sugar.—S. T. Kelsey, in *Prairie Farmer.*

Foreign Intelligence.

Pelargoniums, in June, require much attention. See that stakes and ties are in order to keep the plants in the required form as they come into bloom, and remember that the fewer ties the more credit is due to the cultivator. This is so important that varieties with a sturdy habit should always be preferred, unless there are some very strong inducements to select weak growers. Judicious stopping, plenty of light and air, and a sound compost, are points of great importance. Give shade as the plants show flower, and keep the whole stock as cool and airy as possible.—*Gard. Weekly.*

Cultivation of the Fancy Pelargonium.—The Fancy Pelargonium is one of the most useful subjects for culture in ordinary greenhouses, and it is moreover a general favorite. Its profusion of bloom, long continuance, short sturdy habit, and many delightful tints of color, render it popular with all lovers of flowers, and ensure its cultivation to an extent commensurate with the glass accommodation in all good gardens. As it is now coming into bloom, collectors of varieties who can avail themselves of the opportunity will do right to visit the principal exhibitions, where may be seen the results of skill and care that have combined to rear and preserve, and bring to perfection as specimen plants, some of nature's most beautiful objects. At the exhibitions, the amateur grower may obtain hints for improving a collection, by noting new varieties, and judging of the style of cultivation most suitable for each particular kind, and for the particular structure in which the plants are to be bloomed.

To give a universally correct style for a specimen is somewhat difficult, as it wholly depends upon what it is intended for; we see pyramids trained so regularly as to terminate at top in a single central bloom, which, if for a low position in the conservatory, show their blooms admirably, but we do not set much value upon them for general purposes. Others are grown to a perfect circumference, with a medium rise in the centre, suitable for a low stage or a flat table. This is a very showy and effective style, and one we much admire. Some have the back trained perpendicularly, and the front shoots brought below the rim of the pot, so as to form a pyramid or half-circle. These are most suitable for a lean-to stage, as they show a large front. In forming our first training for a specimen, bear in mind that as the twig is bent so will the tree be inclined, hence the necessity of deciding early upon the description of plant required. Plants grown as bushes, and in larger pots than thirty-twos, soon require considerable thinning, or they will become weak. The time of propagation depends on whether the plants are bloomed early or late; for the main stock, July may be taken as the average time. Supposing the plant to have done blooming, and the wood to be well ripened, from full exposure to the sun, and from three or four days' dryness at the root, they are then fit for cutting down. Upon the way they are cut depends the form of the plant the ensuing season, the object being to have an uniform plant without much twisting, and upon an established bottom, large or small. After cutting down, place the plants in an open place, shading for a few days, until the ends of the shoots that have been cut are dried over. Water but moderately until there is a sign of fresh growth, then give a slight syringing overhead, and shut up early with the sun, so as to cause evaporation, which will much assist them in making fresh growth. After the first start, they are to be grown as slow as possible through the autumn and winter months. The next operation, after cutting down, is to select cuttings of the strongest and best ripened wood, in lengths of two joints, with a straight cut at the bottom, a little below the lower joint, and a slanting cut of a half-inch above the top joint; place them in the mould round the sides of the cutting-pot, midway between the two joints. The mould should be a compost, consisting of loam three-fourths leaf-mould, or peat, one-fourth, with a medium addition of sand. Give them a gentle bottom heat, and shade lightly for two or three weeks, by which time they will have struck, and should then be taken to a cool house, and gradually hardened off so as to bear full exposure to the sun and air. They should then be potted off as soon as possible before the roots get too long; indeed, it is thought by some that if they are merely calloused over they are fit for potting off. I, however, like to see a few fibres, but not too long, the one excess being as bad as the other. After potting off, keep them rather close for three or four days, and shade from hot sun, then give a full circulation of air at all opportunities, avoiding easterly winds. Attend to potting on until you reach the sized pot intended for blooming; gradual shifts from one size pot to another are to be recommended as preferable to large shifts. If intended to bloom the plants in forty-eight size pots, they should have three changes from the cutting-pot, and the crown or centre-bud should be taken out in the second shift; but if the growth be then not far enough advanced, it should be removed as soon as possible after the last potting, keeping the plants rather dry for a few days until fresh breaks appear, otherwise weakness may be expected. If intended to bloom in large sixties, no stop is required; and if properly grown, side-breaks will appear at the same that the crown truss is forming, thus supplying a succession of bloom. For specimens, commence with small plants of free growth, allow them to attain the height of nine joints, with two joints for a single stem, not merely for the appearance, but to diminish liability to canker, which may be feared if the breaks allowed to rest upon the surface soil; also by constant pottings the plants are liable to get some portion of the bottom breaks below the surface of the soil, particularly

such as are known amongst growers as of a 'miffy' habit: that is, of a delicate constitution and high breed, as for instance Cloth of Silver, Modestum, and Prima Donna, which require great care to be taken as to their watering and drainage. Suppose then we have a plant in a forty-eight size pot, eight or nine joints high, ready for its first stop; take the crown clean out, midway between the two joints, keep the plant dry for three or four days, unless the season of the year should be hot, and cause it it to flag, then a slight watering overhead would aid the action of the sap in the foliage. The first breaks will soon make their appearance, provided the root action be all right; after the first breaks have attained the length of six or seven joints, they should have their first stop, whatever mode of training may be adopted. The training usually followed is pegging the shoots out; I prefer tying a piece of bass round the pot, close underneath the rim, and bracing the shoots down to it, which is a neat and ready system. When the breaks have attained the length of six or seven joints, they may be stopped again and tied out. The exact time of stopping must depend upon the quickness of growth in young plants, but avoid stopping after March if possible, and at furthest not later than the middle of April, otherwise there is not sufficient time for ripening the wood, a matter of the greatest importance to ensure good quality of bloom and well establish the specimen.—James Holland, gardener to R. W. Peake, Esq., Spring Grove, Isleworth, in *Gardener's Weekly*.

[Scarlet, Horse-shoe, Zonale, and all other Geraniums, so-called, are now called Pelargoniums in England; and what were known as Pelargoniums, for distinction, they now call "Fancy" Pelargoniums.—Ed. *G. M.*]

Artesian Wells.—It has been observed that Artesian wells can only be successfully bored where porous strata are intercalated between impermeable ones. Where the intercalation is often repeated, several distinct sources of water may supply a single well. In that at Bruck, near Erlangen, there are three such sources; in that at Dieppe, seven; whilst the well at Dulmen, in Westphalia, is supplied by no less than 13 strata, in a depth of 380 feet. The great distance from which the water of an Artesian well may be derived, was well shown by a boring near Tours, from which, when the borer was withdrawn, quantities of sand and small snail-shells were ejected, which must, without doubt, have found their way there from the mountains of Auvergne, 30 miles distant. A curious proof of the occasional direct communication of Artesian borings with superficial accumulations of water, was given by wells of this description at Bochum, in Westphalia, and at Elbœuf, in France, in the water from both of which eels and small fish, have at times been found.—*Pop. Science Rev.*

How to Grow Celery.—I am not about to tell you to grow it to an enormous size, for it is no improvement to have it weighing more than 5 or 6 pounds, and even half of these weights is plenty if it has to stand the winter.

In the first place it is necessary to get good seed and of a good kind; and in the next, it is indispensable that the seedlings be not raised too quickly. I have found that if the seed is forced in too much heat the plants are liable to two faults: running to seed, and to be hollow.

In commencing to raise Celery, it will be found a good plan to get some well-rotted turf and well-decayed cow or horse-dung in equal quantities. Mix them well together. If the dung is wet, dry it until it can be handled without sticking to the fingers. Place two inches deep of the mixture in a shallow box or seed-pan, and about half or quarter of an inch of fine soil on the top of this. Make it level, then sow the seeds, carefully covering them with fine light soil or sand, but taking care that they are not buried too deeply; a covering of an eighth of an inch is plenty. Place the box or pan in some place near the glass, so that the young plants will not be drawn, and never let the heat get above 65°. Give a dose of clear liquid manure once or twice a week when the plants are up.

When they are grown so large as to have two leaves besides the seed-leaves, prick them out into beds or boxes, and let the soil into which you prick them be the richest you can get. Put them in some sheltered situation, if not possessed of frames. They generally grow well enough if pricked-out in April where old bags or pea-rods can be thrown over them on severe cold days or nights. I raise my main crop this way, and have not half a dozen bad sticks in five hundred.

I have found it a good plan to make Celery-trenches, leaving a little soil in the middle, to insert the plants before manuring, putting the manure in afterwards with a basket. It is a little more labor than the old or common plan of putting in the manure first, but I think it pays better before the end of the season.

The Celery, being naturally a marsh plant, requires in its cultivation a cool bottom with plenty of moisture. This is one reason why I prefer planting before I put in manure, as the manure laid on the top, or rather up each side of the plants, helps to keep in the moisture. It can also be kept in by placing layers of short grass, or litter, or old sawdust, mixed with equal parts of good rotted manure and common soil. This I like better than manure alone for growing them in for the table.

Never allow the plants to want water in dry weather, and give once or twice a week a dose of liquid manure, which may be made of guano, or cow, sheep, rabbit, or horse dung; also, of potash or common house slops.

The great point in Celery culture is to keep the plants steadily growing without too much heat. There are many plans for blanching Celery, but the best and easiest is to put a handful of clean sawdust into the centre of the plants when soiled up for the last time. The soiling is best performed in three or four operations, and not all at once, but just as the plants keep increasing in size.—John Hague, in *Cottage Gardener*.

Italian Verbenas.—These Verbenas are of Italian origin, and we are sorry to say that in the whole series we have not yet met with one which was worth growing as a garden flower. They have poor, paltry, misshapen flowers, inconstant colors, and inveterably bad habits. Perhaps our cross-breeders may make something out of them, and we trust they may, for a greater variety of good striped Verbenas is very desirable. These Italian striped varieties are unevenly flaked with purple or red upon a white ground, as in the case of Carnations, not bordered with white, like the English varieties before alluded to.—*Gardener's Chronicle.*

The Lignite Flora.—The sketch I am going to give refers to a remote, though not the remotest period of our planet—one which, if not immediately preceding, at all events is very near man's appearance on earth. It has been named the Tertiary period, and is distinguished by its supplying us with the enormous masses of combustible materials preserved in argillaceous and arenaceous strata in the shape of lignite. There can be no doubt that the geological conditions of our globe were at that time very different from what they are at present; and the surface of our planet, and the elevation of the solid land, must have essentially differed from what they are now. It is well known that in the beds of brown coal, when they have not become a compact mass, we find fragments of a great number of plants and animals. It is highly interesting to cast a glance at this subterranean herbarium, and 20 years ago I eagerly studied this singular collection, under very favorable circumstances. At that time the botanical treasures of the much older coal formation, and of the later deposits, had been investigated, but those of the lignite still remained a sealed book.

As might have been expected, the study of these vegetable fragments made a deep impression upon me, and caused me many a surprise. The plants and animals of earlier periods exhibit but slight analogy with those of the present. But here all was reversed. In these investigations (often difficult) one frequently came across known forms, and sometimes it would seem as if one had to deal with the sweepings of a park planted with indigenous and foreign trees and shrubs. The most surprising was, that a considerable number of these plants so closely resembled the trees and shrubs now-a-days growing in North America, as to be scarcely distinguishable from them. Justly attaching great importance to this fact, I may be permitted to refer, in support of it, to a few fossils. One of them is a rather large 3—5-lobed leaf, with toothed margin and long petiole. The leaf of only one tree now indigenous to North America resembles it entirely, or very closely, and that is the Amber tree (Liquidambar styraciflua); well known by the resin it exudes. That no mistake has been committed in this instance is more than proved by the fruit, which has been met with in a fossil state, and closely resembles that of the Amber tree. The fragments of leaves submitted next, one of which has been found in Switzerland, the other in limestone beds in Sinigaglia, are instantly recognised as those of the North American Tulip tree (Liriodendron tulipifera). Though they may not be quite identical with them, they must at all events, be regarded as derived from the nearest ally. In Iceland, besides the leaves, the fruits (of L. Procaccinii, Ung.) have been observed. Amongst the other fragments frequently found in lignite are branches covered with minute lancet or nearly needle-shaped leaves, pointing towards a Conifer which is not met with in Europe, but has an extensive geographical range in North America. It belongs to the oldest vegetable monuments of that country, and is the Taxodium distichum. Other fossils of the lignite beds point towards trees of which several species at present inhabit North America. They belong to the genus Nyssa. The fruits and seeds of Pavia and Robinia, occasionally encountered, prove that these two genera, now confined to North America, and admitted into our gardens as exotics, at one time flourished in Europe. It is well known that

Europe is destitute of walnuts, the one cultivated being derived from the woody mountains of the southern Caucasus. But a great number of different nuts are very common in lignite formations, and if compared with a large North American genus, their close resemblance at once becomes manifest; the so-called grey Hickory (Juglans cinerea), can scarcely be distinguished from the fossil Juglans tephrodes, Ung. I might enlarge upon the different Maples, Oaks, Poplars, Hornbeams, Firs, and Yews of the lignite flora, the nearest allies of which are not the species still existing in Europe, but almost exclusively those in North America; and I might add a great number of other details, all proving that the lignite flora had not an European but a North American character. This conclusion, which I published 20 years ago, has not been shaken by any subsequent investigations.

These considerations force us to the conclusion that there must have have been a continental connection. In the Tertiary period, or at the time when the lignite was formed, Europe must have been connected with North America, and the Atlantic Ocean must have been divided at one place or other by a continent.—Dr. F. Unger, in *Journal of Botany.*

Weight of Orchard-house Fruit.—My trees are young, but they have ripened one dozen and a half each on an average, and all fine fruit, many weighing 7 and 8 ounces.

At the Isle of Wight Horticultural Society's Show, held on the 17th ult., I exhibited twelve Peaches—viz., four Grosse Mignonne, four Early Crawford, and four Noblesse. The largest of the twelve was an Early Crawford, it weighed 9 ozs., and measured 10½ inches in circumference. I also showed twelve Galande, weighing collectively 3 lbs. 12 ozs., and very handsome they were. Everybody said they never saw the like, and I was glad to get out of the way. This may appear egotistical, but it is nevertheless true.

Many of your readers do not believe in pot culture. I have seen some miserable failures, but I think I have succeeded in producing quantity and quality. I have a few Barringtons left that will weigh 7 or 8 ounces.—*Journal of Horticulture.*

Dinner Table Decorations.—The present exhibition produced the most interesting examples that have yet been shown in competition for Sir Wentworth Dilke's prizes. Yet though there was considerable diversity of taste and style, there was a certain sameness throughout, showing that the Misses March's successes have exercised a great influence, and for a season at least furnished the model of orthodoxy. Preferring always to believe in judges, and by natural gallantry inclining to attribute infallibility to a bench composed of lady judges, it is with great reluctance we venture to question if the judgments on this occasion were really sound. Let no one suppose we shall attempt to describe the designs, or give explicit reasons for questioning the judgment; those only who saw the exhibition will understand what little we have to say on the subject. The first prize went to Mrs. Worthington Bliss for a very beautiful arrangement of fruits and flowers. In the centre-piece was a tall glass vase encircled at the base with roses, bunches of grapes, and one bloom of Richardia ethiopica, accompanied with a leaf of the variegated variety of the same plant. The top was dressed with fern fronds and roses in a circle; above these a mixture of Stephanotus, Lily of the Valley, white Geranium, and leaves of Cissus. There was a smaller vase on each side, the whole forming a group of three: on one side the base was smothered with yellow Azalea and Corn flowers. On the stem were suspended little baskets filled with Tetratheca blossoms, and the top consisted of a circle of white Roses and purple Gloxinias, surmounted with a mixture of white flowers. On the other side, at the base, yellow Azalea and Corn-flower, with a few Cherries in the centre; in the baskets Corn flowers, the summit white Roses and blue again. Lilies of the Valley and fronds of Adiantum were sprinkled freely all over the group, which was exquisitely designed and furnished. with this exception, that the left-hand blues were stronger in tone than those on the right, and this want of perfect balance we thought detracted much from the merit of the composition.

The second prize went to Miss March, who really missed the mark in using Begonia leaves as a relief to grapes, which gave a heavy tone to the group, though it was, *malgre* this oversight, most tastefully arranged.

Miss Wint took the third prize, with three handsome glass vases surrounded with small cornucopias furnished with Fuchsias, Pelargoniums, Grapes, and Fern leaves. This was a tasteful and moreover a very cheerful group, but it was wanting in character: there was something common-place about it.

Better, to our thinking, than all the foregoing, not excepting even the beautiful group from Mrs. Bliss, was that from Viscountess Holmesdale, a glittering combination of little mirrors, cut glass vases, and silver chains, the furnishing of which were in admirable taste. Perhaps this overpassed

the boundary-line which the terms of the composition impose; as respects simplicity of arrangement, certainly there was nothing costly in it, and nothing which it would require any peculiar training to manipulate. This was commended.

Mrs. James Cutbush placed on the table a group which might be second to Viscountess Holmesdale's, but we could not consider it second even to the premier group, so correct was the style, and so delicate and tasteful the coloring. This, moreover, could not be objected to as unnecessarily complicated, or as costly in any of its details. The principal materials were vases of the established pattern; the centre had a base consisting of Begonia leaves, Pelargonium blossoms, leaves of Centaurea gymnocarpa, and Fern fronds, with a margin of Tradescantia bicolor and Lastrea fronds all round. From five arms depended five small baskets filled with mixed flowers, mostly white. From the vase at the summit of the stem hung three bunches of black grapes, above which was a mixture of flowers. Each of the side vases had at the base Pteris serrulata and Dielytra spectabilis for a margin; attached to them were five baskets filled with flowers and ferns, the arms wreathed with the variegated Japanese Honeysuckle, with Geranium and white Pinks at the summit, and tufts of Briza maxima peeping out above all.

There was yet another group deserving of honor, and that came from Mrs. Parsons, of Queen's Road, Regent's Park. The centre vase was filled with Fuchsias and Ferns, with the light flower spikes of Milium effusum—one of our common wayside grasses—peeping out above all, just as Mrs. Cutbush had used the spikes of Briza maxima. In the side vases were fruits and flowers, and midway between base and summit small dishes filled with blocks of ice, which let fall a constant drip on the Roses and Fern fronds in the dish below. This was not only a novel feature, but considering how delightful it is to see blocks of ice amongst flowers during dinner, and how conveniently ice could be supplied for cooling wine and for other purposes at the table, it is worth while to accept the ingenious hint so offered by Mrs. Parsons, and consider whether ice may not be legitimately reckoned among the elements admissible in the floral decoration of the dinner-table.

These several designs had their full share of admiration, and we are bound to add that we heard the decision of the judges questioned by many. We are very much inclined to think that Viscountess Holmesdale, Mrs. Bliss, and Mrs. Cutbush might have been equal first; Mrs. Parsons, Lady Emily Peel, Miss March, Miss Wint, and Lady Catherine Fielding equal second; then there might have been two or three equal thirds; and the public would have been as well satisfied as the competitors, for the justice of the decision would have been manifested in the obvious degrees of merit of the subjects of competition.—From a report of last August's Exhibition of Royal Horticultural Society in *Gardener's Weekly.*

Hard Names of Plants.—There are hosts of unreasonable people, with the merest smattering of knowledge, who inveigh against the practice of giving hard Latin and Greek names to plants and insects; but those gentlemen have no notion of the exceeding difficulty there is in assigning characteristic and distinguishing names to the hundreds of thousands of objects with which nature supplies us. In fact, nature's variety beats man's inventive power, in the way of nomenclature. Mr. Bates, in his recent visit to the river Amazons, found 8000 plants and insects that had never been noticed or scientifically named before. Botanists and entomologists are usually glad to call a plant or insect by the name it bears in its native country; or they select some peculiarity about it which they try to expressoin a Greek or Latin form; or they adopt the name of the person with whom it happens to be associated, as the discoverer or describer, &c. We have instances of each of these classes of names occuring in abundance in the book before us. Thus:

Au'cuba (Bot.), the original Japanese name of the shrub.

Pteran'dra (Bot.) *Pteron*, plume or feather; *andros*, a stamen; a genus of Malpighiacæ.

Malpi'ghia (Bot.) P. N. from M. Malpighi, Professor of Medicine of Bologna; typical genus of the splendid Nat. Ord. Malpighiaceaæ.

When once people know the derivation, meaning, and history of a hard name, it is found that they no longer complain, but rather seem to enjoy its strangeness, and soon get it imprinted on their memory. It so happens that these proper names have been very extensively used in memory of Englishmen, or distinguished naturalists of other countries: and the names of the latter are not always euphonious to British ears. Nobody could object to Barringto'nia, Bartholi'na, Barto'nia, Bartra'mia, Ba'rtsia, whatever they might say to Kaulfus'sia and Kiggela'ria; but if there were any occasion, the public would assimilate them just as easily as they have adopted Fu'chsia and Eschscho'ltzia.—*Gardener's Chronicle*

Best Roses for City Gardens.—A dozen of the best varieties for the purposes of suburban cultivators are appended, most of which are among the most beautiful kinds we possess:—*Hybrid Perpetuals*—Charles Lefebvre, General Jacqueminot, Jules Margottin, John Hopper, Madame Domage, Madame de Cambaceres, Madame Knorr, Anna Alexieff, Victor Verdier; *Tea*—Gloire de Dijon; *China*—Mrs. Bosanquet; *Bourbon*—Souvenir de la Malmaison.—*Gardener's Weekly.*

Mr. Nyce's Plan of Preserving Fruit.—Some years since we published an account of Mr. Nyce's plan of Preserving Fruits. It went the rounds of the chief English newspapers, and at last we find it copied into the *London Gardener's Weekly*, somewhat altered from the original article of ours, by its frequent copying; but with the following very original note of the *Weekly's:*

"We quote this from a daily paper. It will amuse if it does not instruct. It is almost equal to wit, and might have been intended for it."

We extract this 'smart' notice for the benefit of Mr. Nyce and his friends, who are making fortunes out of the idea. It will certainly 'amuse' if it do not 'instruct' *them.*

History of the Calceolaria.—In 1820 only six species of this charming flowering plant were known in this country, the handsomest of which was *C. corymbosa*, the flowers of which were yellow. During the subsequent period, up to 1830, several other kinds were introduced from Chili, two of which had purple flowers, viz.: *C. purpurea* and *C. arachnoidea.* As soon as the plants bloomed in the nursery of Messrs. Youngs, of Epsom, it struck the late Mr. Penny, who was then foreman in that establishment, to attempt to hybridize them; the attempt succeeded beyond expectation, and the result was a number of beautiful kinds were produced, and plants of which were soon offered by Messrs. Youngs to the public. The first-named hybrid was *C. Gellaniana*, the blossoms of which were dark brown and orange; this was raised by impregnation of *C. corymbosa* with *C. purpurea.* The next kind raised was *C. Youngii*, which was produced by the impregnation of *C. corymbosa* with *C. arachnoidea.*

In 1831, *C. crenatiflora* (the Pendula of some), having yellow flowers spotted with dark, was introduced into this country; several splendid varieties were soon produced.

It is singular that the true *shrubby* kinds were found to unite with the *herbaceous;* and *C. bicolor*, having flowers pale yellow and white, was impregnated by some cultivator with some herbaceous kind, and some fine sorts were the result.

These productions gave a stimulus to many persons attempting raising new varieties, and annually since that time the number of beautiful kinds have been increased, the productions varying in every possible shade of yellow, orange, brown, purple crimson pink, white, rose, scarlet, etc., often beautifully spotted, or delicately shading off into a fine contrast of colors; and in some cases the flowers have, as it were, a dust of flour sprinkled over them, as is the case with a number of kinds we saw in bloom during last summer. The forms, too, of the blossoms are very various, and the size, by hybridizing and culture of some of the newer kinds, is astonishing. We saw one kind exhibited in London which has a bloom nearly *round*, and it measured an inch and a half across.

Soon after Mr. Penny had succeeded in raising his two first kinds, he was closely followed by Mr. Joseph Plant, of Cheadle, in Staffordshire, and Mr. Joshua Major, of Knostrop, near Leeds, both of whom have been remarkably successful, and in true *shrubby* kinds their productions stand unrivalled. Mr. Barnes, gardener to W. Norman, Esq., Bromley Hill, in Kent, and Mr. Green, gardener to Sir Edmund Antrobus, Bart., have raised many beautiful half-shrubby, as they are termed, and herbaceous kinds, and which have been exhibited at the Chiswick and Surry Garden shows, and so much admired.—*Floricultural Cabinet.*

Absorption of Carbonic Acid of Plants.—The result of the experiments instituted by Professor Draper on this subject, fully proves that the capabilities of a plant for absorbing Carbonic-acid gas from the atmosphere, are in exact proportion to the illuminating powers of the rays of light. The varied and delicate colors of flowers are produced by a somewhat different process from the other colors of the plant, inasmuch as the flowers do not appear until the plant has attained a certain degree of maturity. On this subject Liebig has the following remarks:—"The leaves of the plant being fully developed, they take in more nourishment than what is necessary for the existence of the plant. This extra nourishment takes a new direction; a peculiar transformation takes place, new compounds are formed, which furnish constituents of the blossom, fruit, and seed."

Arnica.—As this article is entirely new to the Pharmacopœias of the United Kingdom, although well known and much employed in Prussia and some other parts of Germany, in Italy, and in the States of North America, it will be necessary for me to make a few remarks on its botanical and geographical sources, its characteristics, and reputed medicinal properties. Arnica-root is directed to be employed in the British Pharmacopœia; but on the Continent and in America the flowers are preferred, and ordered in all but one of the preparations which are there officinal. We are ignorant of the reason why the root is ordered in the British Pharmacopœia. We should have preferred the flowers, because they would be more likely to be uniform in their properties from being gathered at a definite period; while the root, from being collected at different periods, will necessarily vary considerably in its strength. The plant from which this article of the Materia Medica is derived is the Arnica montana, Linn., and belongs to the natural order Compositæ. It is a native of the mountainous districts of Europe, and of certain parts of N. America and Asia. The so-called Arnica-root is really the rhizome, to which numerous small rootlets are attached. The rhizome is more or less twisted, rough from the scars left by the leaves which it formerly bore, somewhat cylindrical in shape, from one to three inches in length, and two to three lines in thickness. From this, numerous small rootlets arise, of variable length, generally two or more inches, and about the thickness of a common knitting-needle. Both the rhizome and rootlets have a brownish color externally. The odor is peculiar, feebly aromatic, and disagreeable; and the taste somewhat peppery, bitterish, and nauseous. The root has been found to contain volatile oil, acrid resin, extractive, gum, and woody fibre. The extractive matter of Arnica-flowers, which is doubtless similar to that of the root, is said to be identical with cytisin, a poisonous principle obtained from the seeds of the common Laburnum tree. Mr. Bastick has also obtained from Arnica-flowers a peculiar alkaloid, which he has named Arnicina.

The properties of Arnica appear to depend essentially upon the acrid resin, although these are doubtless modified to some extent by the volatile oil and extractive. Arnica is very highly valued as a remedial agent in certain parts of the Continent. It is regarded as a most useful stimulant in typhoid fevers, and in various debilitated conditions of the system; in paralysis, amaurosis, and other nervous affections, etc. The trials which have been made in this country of its remedial virtue do not in any material degree confirm the extravagant encomiums which have been passed upon it on the Continent. The dose of our officinal tincture is from two fluid drachms to a fluid ounce, every three or four hours.

The tincture of Arnica-flowers, and also that of the root, have been much employed as a domestic remedy in this country and elsewhere, as an external application in sprains, bruises, etc. The experiments of Dr. Garrod, however, lead to the conclusion that its efficacy is entirely due to the rectified spirit employed in its preparation, as he found that about the same remedial effects were produced upon certain bruised surfaces by the application of either simple rectified spirit or tincture of Arnica. Altogether, so far as present experience lead us in this country, we have reason to believe that the virtues of Arnica, both as an external remedy and for internal administration, have been vastly over-rated. —Prof. Bentley, in *Pharmaceutical Journal.*

The Vine in Algeria.—In the year 1862 the land planted with the vine was estimated at 16,000 acres,—8,000 situated in the province of Algiers, 5,500 in Oran, and 2,500 in Constantine. The vineyards produced in that year 43,222 hectolitres of of wine, and 18,472,912 lbs. of grapes were sold for the table. The land was chiefly planted with Chasselas Burgundy, Alicante, and Grenache vines. The greatest fault to be found with the Algerian wines is their acidity. In 1863 the number of planters amounted to 27,281, of whom 22,281 were natives, and 5,000 Europeans; the vineyards covered 87,000 acres, of which 50,000 were planted with vines producing black, and the remainder with those producing white grapes.—*Paris Correspondent of the Times*

The Ivies of Europe, Africa, and Asia.—Whether there is only one species or several mixed up with the plants which now go in gardens and herbaria under the name of Hedera helix, and make up the genus Hedera, as now circumscribed; and whether one or two species are indigenous to the British Islands, are still open questions. No botanist has, as yet, been successful in finding good characters for what have been considered as species; and though all other Hederaceæ have a limited geographical range, Helix is supposed to be an exception to this rule, and to be spread over three continents, Europe, Asia, and Africa, from the Canary Islands to Japan, and that this circumstance alone sufficiently accounts for the numerous existing varieties. After carefully investigating the subject, and examining every specimen I could lay my hand on, aided by contributions from botanical friend-

have arrived at a different conclusion. I can clearly distinguish three distinct species, which, though having each many varieties, do not run into each other, and have each a distinct geographical range. If these different species had to be named anew, I would propose to call them respectively the European, the African, and the Asiatic.

The European Ivy is Hedera helix, Linn. It is not found out of Europe, and may at once be known by its uppermost leaves being ovate or elliptical, its umbels arranged in simple racemes, and its pedicels and calyx being covered with white stellate hairs, the hairs having from 6-8, but never more, rays. From time immemorial, a variety with white and yellow variegated leaves has been cultivated in gardens; even Pliny mentions it; indeed it is one of the oldest, if not the oldest, variegated garden plant of which we have any record. The fruit of H. helix in northern Europe is generally black; in Germany it occurs occasionally with white; and in European Turkey, Greece, and Italy, with yellow berries. The black-fruited kind has always been considered as the true H. helix, and the white as a variety of it, which indeed it is; but the yellow has been made, I think unjustly, into a distinct species, and named H. Poetarum, by Bertolini, and some time previously H. chrysocarpa, by Walsh. It is the latter plant which played so important a part in ancient Greece and Rome, its leaves supplying the materials for the wreaths with which poets were crowned, and at the festivals in honor of Dionysos, all casks, vessels, amphoras, etc., were decorated; it was customary even to lie and sit upon Ivy branches on those occasions. It is believed traditionally, that the yellow-fruited Ivy came from India with the worship of Bacchus; and the fact that the Nepal Ivy, described by Wallich, has yellow fruit, is regarded as a proof of the correctness of this tradition. But a close examination of the European yellow-fruited plant shows that it is specifically identical with H. helix, and specifically different from the Nepal, and all other Asiatic specimens. If the worship of Dionysos gradually crept from India to Greece and Rome, and a yellow-fruited Ivy was deemed essential to its proper performance, there was no need of carrying the Asiatic plant into Europe, as an indigenous variety (chrysocarpa=poetarum) occurred at the very threshold; whilst the Asiatic Ivy, as we shall presently see, is spread from the central highlands to the most western confines of Asia,—to ancient Cholchis.

(To be continued.)

Synonyms of Foreign Pears.—Amongst the decisions on Pears in the Namur International Congress, the following have been made:—*Marie Parent*, *Ferdinand Meester*, and *Surpasse Meuris*, are one and the same. So is *Fondante de Tirlemont* and *Beurre Dumortier*. *Beurre de Merode*, *Colmar Nelis*, *Orphelmie d'Enghien*, are henceforth the correct names for Doyenné Boussock, Bonne de Malines, and Beurré d'Aremberg.—*Revue Hort.*

Forsythia Fortunei.—A new species from Japan, highly praised in English papers.

Vitality of Pine Seeds.—*Pinus Coulteri* has been raised by Mr. Niven, of Glasnevin, Dublin, Ireland, that had been 20 years in Coulter's Herbarium.—*Gardener's Chronicle.*

Panama Hats.—The Jipijapa (*Carludovica palmata*) is common in Panama and Darien, especially in half-shady places; but its geographical range is by no means confined to them. It is found all along the western shores of New Grenada and Ecuador, and I have noticed it even at Salango, where, however, it seems to reach its most southern limit, thus extending over 12° of latitude, from the 10th north to the 2d south.

The Jipijapa, or Panama hats, are principally manufactured in Veraguas and Western Panama. Not all, however, known in commerce by that name are plaited in the Isthmus; by far the greater proportion is made in Manta, Monte Christi, and other parts of Ecuador. The hats are worn almost in the whole American continent and the West Indies, and would probably be equally used in Europe, did not their high price, amounting often to 150 dollars for a single one, prevent their importation. They are distinguished from all others by consisting only of a single piece, and by their lightness and flexibility: they may be rolled up and put into the pocket without injury. In the rainy season they are apt to get black; but by washing them with soap and water, besmearing them with lime-juice or any other acid, and exposing them to the sun, their whiteness is easily restored. The 'straw' (paja), previous to plaiting, has to go through several processes. The leaves are gathered before they unfold, all their ribs and coarser veins removed, and the rest, without being separated from the base of the leaf, is reduced to shreds. After having been put in the sun for a day, and tied into a knot, the straw is immersed in boiling water until it becomes white. It is then hung up in a shady place, and subsequently bleached for two or three days. The straw is now ready for use, and in this state is sent to different places, especially to Peru, where the Indians manufacture from it, besides hats, those beautiful cigar cases, which sell sometimes for more than 6*l.* apiece. The plaiting of the hats is done on a block, which is placed upon the knees; it begins at the crown, and finishes at the brim. According to the quality of the hats, more or less time is occupied in their completion: the coarser ones may be finished in two or three days, the finest take as many months. The best times for plaiting are the morning hours and the rainy season, when the air is moist: in the middle of the day, and in dry clear weather, the straw is apt to break, which, when the hats are finished, is betrayed by knots, and much diminishes their value.—*Seeman's Botany of the Herald.*

Mustard Tree of Scripture.—A plant of considerable interest was that sent by Mr. Bull, as the Mustard tree of Scripture (*Salvadora persica*), and which was the only species in the genus. He had his doubts, however, whether this plant was really the one alluded to in the parable, for the name of one plant was sometimes in the course of time transferred to another: thus the old Primrose was our Daisy, and the old Eglantine was certainly not our Sweet Briar. Dr. Royle, however, who was the botanist that had bestowed most attention on the plants of Scripture, considered the one before them to be the true Mustard tree. It certainly grew to be a tree 20 feet high on the shores of Lake Tiberias, where the parable was spoken; but Dr. Hooker had informed him (Mr. Berkeley) that when in Palestine he saw Sinapis nigra all over the country, that it there grew 10 feet high, and that the Salvadora, on the contrary, was a rare plant; and he (Mr. Berkeley) thought that the balance of evidence was in favor of the Mustard of Scripture being the same as our own.—*Report of Royal Horticultural Society.*

Salisburia adiantifolia.—This is a most distinct tree, obtained from Japan. There is nothing at all like this in existence in the world now, though it presents a wonderful resemblance to some of the extinct plants which we know only in a fossil state, as you may see any day when you have an hour to spare, and can look into the British Museum.

The old town of Brentford has little of interest to benefit the lover of the beautiful or the student of nature; but it possesses one object which I have often gone off my road in order to have the pleasure of seeing, and that is a tall specimen of the Maiden-hair tree (*Salisburia*), which grows close by the side of the main street. There are also two fine specimens of this tree in the Royal Botanic Gardens of Kew; one of these is said to be a male, the other a female. I believe they have never yet flowered, but one can easily fancy that there is a slight difference in the habit between them. It is said to be extensively cultivated in China for the sake of its seeds, which are eaten as food. *Ginkgo biloba* was the name given to this tree by Linnæus, being a modification of its native name. The leaves are light green, wedge-shaped, divided into two or more lobes at the apex; in fact, wonderfully like the pinnule of an Adiantum, in form, color, and even in the veining. There is a variety with leaves much more lobed, but to my taste not equal to the normal form in beauty. One of the most rare of our recent importations from Japan is a variegated form of the Salisburia, the foliage striped with radiating lines of pure white: a perfect gem, but likely to be rare for some time to come. —*Gardener's Weekly.*

Perfume of Violets.—I threw Violets into my water-jug, and left them there till the morning. I took them out crisp and saturated, but almost scentless; on going, however to wash in the water they had floated on, it was deliciously perfumed by them. I wish, therefore, to inform your readers that there is thus an innocent and delicious luxury in store for them, and one which will be available for some time to come, and at no cost.—An Original Subscriber, Bath, in *Gardener's Chronicle.*

Horticultural Notices.

PENN'A. HORTICULTURAL SOCIETY.

DISCUSSIONAL MEETING, APRIL 4TH, 1865.

The President, D. Rodney King, in the chair.

Robert Cornelius, Esq., presented an Essay on

PEAR CULTURE, GRAFTING, &c.

(*For Essay see page* 172.)

Mr. Coleman Fisher—Finds the Bartlett fruit grown on quince stocks, although large and handsome, of poor color and very inferior flavor. On the standard it has a high color and excellent flavor. The Louise Bonne also proves astringent and worthless. Have no trouble with cracking, except in those of the Doyenné class.

Mr. King—Most Pears are increased in size as well as quality of fruit, by being grafted on the quince root. The Seckel is certainly so.

Mr. Schaffer—The Louise Bonne is worthless as an eating Pear in our neighborhood.

Mr. Kilvington—There is an old orchard in West Philadelphia, once celebrated, mostly of the old varieties. The trees were all grafted on suckers, and all such trees sucker badly, and become a nuisance wherever planted.

Mr. Harrison, in answer to an enquiry, described the Dana's Hovey Pear, an excellent early winter variety, very sweet, of the highest flavor and a good keeper. Trees handsome and thrifty. The America also is a first-rate variety in every respect.

Mr. King—The Echasserie or Walnut Pear, an old variety, is an excellent fruit, and keeps well, and ripens with no more care than is required for apples. Among fall Pears, esteems highly the Figue d'Alençon: its crops never fail, and its quality is hardly surpassed.

Mr. Fisher—There is, or was lately, an old tree of the Echasserie at Sedgely Park. The fruit has a thick leathery skin, is an admirable keeper, and the quality good.

Mr. Kilvington—The tree is now destroyed. Another old variety, the Holland Green, a good keeper and good fruit, formerly flourished on Henry Pratt's place, at Lemon Hill.

Mr. Mercer[illegible] being called upon, gave his method of planting a[illegible] Pear trees. Plants on good corn ground, but uses no stimulating manures. Top dresses with wood-ashes and cinders from the blacksmith's forge. The trees are put 21 feet apart, and Grapes and Strawberries grown between [illegible] After 8 to 9 years cultivation ceases, and the fertility of the soil maintained by top dressing. Is quite familiar with the old Pears planted by the first French settlers near Detroit. They are still fruitful and healthy, and have been growing in sod certainly for the last 60 years. Thinks they are of the Jargonelle variety. They average three feet in diameter, and have produced as much as 87 bushels of fruit in a year.

Mr. Fisher—Has cultivated Pears 7 to 8 years. First planted both dwarfs and standards in the vegetable garden; lost one-half of them. What with the blight, bark-louse and poor fruit, thought the dwarfs a poor investment. Next planted some new trees, outside the garden, part in sod and part in plowed ground; the latter grew the best. Put Raspberries and Strawberries between. Uses only wood-ashes and bone-dust. Iron for top dressing can be had in the finely powdered peroxide of iron from the Cobalt factories. In his field several of the standards fruited in 7 years from planting: the Beurré d'Anjou, B. Bosc, Winter Nelis, Onondaga, and others. His orchard consists of about 600 trees, two-thirds dwarfs, on a hillside sloping south-east. Pinches and trims at any time. Finds no difficulty with dwarfs managed in this manner.

Mr. King—My place is on a rocky hillside; the earth washes away, leaving the quince roots exposed, and the trees are soon destroyed by the borer. Have, therefore, substituted standards.

Mr. Merceron—If it could be accomplished, the very best plan would be to plant Pear seeds, grow the young stocks, and graft the trees on the very spot where they grow and fruit. All old *seedling* Pear trees, growing where they originated on their own roots, are invariably long-lived and healthy.

Mr. Schaffer—Would plant standards in preference to dwarfs; although the latter may do well if well cared for, yet with equal care standards will bear abundantly in a few years. Cultivates well; the trees in sod grow slowly and stunted. Had Seckels in sod, and in the garden well manured; the latter grew three times faster than the former. Was troubled with the bark-louse. Removed it entirely from both Apples and Pear trees, by applying Mape's Soda-wash, made by dissolving one pound of Sal Soda, calcined by heating to redness in an iron pot, in one gallon of water.

Mr. King—Has found a succesful wash in a mixture of one part of Sulphuric acid in ten parts water. It removes the moss and scale, and cleans the bark thoroughly.

Mr. Harrison preferred standards; after cultivating the soil till the tree is established, seed it to grass. In the desire for early bearing, longevity is too generally little thought of. We plant Pears, *not* for our heirs, who, consequently will have to plant for themselves. Has known of the finest fruit of all varieties, the Duchesse included, grown on standards.

Make the soil deep by plowing, and use no fermentable manure.

Mr. Schaffer—Has obtained very fine fruit of the Bartlett, in two years, by grafting on old standards.

Mr. Earle—With me most of the large fruit is blown off during the high winds of autumn, before it is mature enough to gather, and consequently shrivels without ripening.

Mr. Harrison—The Bartlett on the standard is very superior in flavor to that grown on the dwarf: more solid and fine grained.

Mr. Schaffer—On visiting Mr. Saunder's late nursery in Germantown, was struck with the superiority in size, shape, and healthfulness of the standards to the dwarfs

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

THOMAS MEEHAN, Editor.
W. G. P. BRINCKLOE, Publisher. JULY, 1865. VOL. VII.---NO. 7.

Hints for July.

FLOWER-GARDEN AND PLEASURE-GROUND.

Plants in pots and tubs set about to ornament the grounds, frequently suffer from want of water. Occasionally they should have a soaking of water that will go through the soil to the bottom of the tub. About once a week of this treatment will do. Many plants, especially Fuchsias, lose their leaves from Red-spider: this is the season when their ravages commence to be troublesome. Syringing with warm water, in which flour of sulphur has been stirred, is one of the best remedies. Oranges, Lemons, and Oleanders are attacked by scale: soap-suds, heated to 135°, is the best thing to syringe with.

Keep the pruning-knife busy through the trees and shrubs, with the object of securing good form. Judgment will soon teach one which shoots would spoil the shape if not taken out.

The lawns, walks, and flower-beds will still require constant care, and attention can be bestowed at this season on improving the form of trees and shrubs. In some parts of a large garden, trees are in better keeping with surrounding scenery when suffered to grow wild and pretty much to themselves; but near buildings, or in any part of a garden which is to denote high keeping, symmetry will ever be considered a chief element in beauty, and the aim be, what after all is the true object of gardening, an improvement, in fact, over the prettiest natural scenes. Trees and shrubs can be made as regular as we wish, by training a shoot here, and tying one there—now using a stake, and at another time employing a string. After a few weeks they will grow as you have placed them, and exemplify the adage, that "as the twig is bent the tree's inclined." The most malformed or ugliest specimen of an evergreen may be made an exquisite "thing of beauty" by such trifling care.

Plants set against walls 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 bucketful 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 [illegible] and the result is, the more water [illegible] wanted.

The time is co[illegible] of the past fall an[illegible] n during any other [illegible] vigorous growt[illegible] apprehended, [illegible] tive, and can [illegible] calls for; but if no[illegible] have been formed, and the leave[illegible] ing for the most part on the sap in the [illegible] and bark, and hot, drying weather will tell with injurious effect on such trees. This is generally [illegible] 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 out some of the branches, syringing with water occasionally, shading the trees where practicable, or wrapping the trunk in hay-bands or matting, the south-west with boughs or boards.

Amateurs may have some rare or choice shrub they may desire to increase. They may now be propagated by layers. This is done by taking a strong and vigorous shoot of the present season's growth, slitting the shoot a few inches from its base, and burying it a few inches under the soil, or

into a pot of soil provided for the purpose. Any thing can be propagated by layers; and it is an excellent mode of raising rare things that can be but with difficulty increased by any other.

Hollyhocks will be coming into bloom at this season. They have now become so much improved as to be one of the most popular flowers for the summer decoration of the flower-garden. If the kinds are kept carefully separate, any particular variety will reproduce itself from seed. They may be more certainly kept pure by cutting of the flower stem; each bud will make a plant. The seed should be sown as soon as ripe in a light rich soil, in the open air. If retained till late in the season, they will not probably flower until the next year.

The 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.

The next two months will be the trying time with such plants as Auriculas, Cinerarias, Calceolarias, and others which cannot endure the dry atmosphere of our summers. We keep our Auriculas all the year round [illegible] glass, with the best results. They would [illegible] any light enclosure that would [illegible] escape of moisture. A sur[illegible]e contrivance for th[illegible]e to store away [illegible]r.

[illegible]ing the surface [illegible] weather, will be [illegible] the main body cool [illegible]ing the air, which is a good non-conduc[illegible]s, however, which are deficient in loam [illegible] which sand prevails to a great extent, frequ[illegible] waterings 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.

The Gladiolus has become one of our most popular summer flowers. [illegible] who have collections of them arrange the varieties very tastefully according to their colors. Take a list [illegible] their flower, so as to arrange them properly next year. We give the same advice for Petunias, Verbenas, and Geraniums. The various shades of colors of these varieties properly arranged, make beds peculiarly pleasing. This is one of the arts of modern flower-gardening, to arrange flowers properly according to shades of color.

FRUIT GARDEN.

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 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.

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 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 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 a very sandy soil, a very heavy dressing of stable manure is objectionable. Wood ashes, ground bones, and matters of a mineral nature are far 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 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.

VEGETABLE GARDEN.

The remarks of last month are applicable for Celery.

Sow Endive, and towards the end of the month transplant in rows. They should be set out in rows eighteen inches apart, and one foot from each other. The soil can scarcely be too rich for them. Seed may yet be sown for a later crop.

The main crop of winter Cabbage is often planted the first or second week in July. In planting, if the weather be dry, it is a good plan to make the holes before planting and fill up with water; after soaking away, the plants may be set in, and they seldom wither afterwards, though without rain for a month. Another and more expeditious plan is to have the plants ready with their roots in a pan of water. They are then set into the hole at the time it is made. The water adhering to the roots then gives to the set out plants the advantages of puddling.

If Broccoli is a desired vegetable, it may be had all through the winter by being sown now. In about four weeks plant out into rich garden soil. On the approach of frost, take up the plants, with a portion of soil adhering, and pack them closely in a warm and somewhat damp cellar. They will continue to grow, and produce nice heads.

Beans may be sown up to the end of the month. For winter use, the White Kidney is very popular, although other kinds are very extensively grown for the same purpose.

In some families, large, full-grown Carrots are objectionable. Seeds of the Longe Orange, sown now on rich sandy soils, form neat and desirable roots before winter. The same may be said of Beets.

Cucumbers for pickles are also sown about this time. They usually produce a greater number, and consequently smaller fruit, than when sown earlier. The Short Prickly is the kind to employ.

HOT AND GREENHOUSE.

An important point just now is to prepare winter-flowering plants. Cinerarias, Chinese Primrose, and Calceolarias should be sown about the end of the month; and cuttings made of most kinds of plants that are desirable. It is a great mistake, often made, to store up and treasure year after year, old and over grown specimens, when younger ones would bloom more vigorously, and give better satisfaction. Propagation of plants will go on. It is one of the pleasures of the gardening art; and where old treasures are prized, the greenhouse soon becomes a crowded mass of ugliness, with credit to neither gardener nor owner.

In training vines, so manage that there shall be a due proportion of branches hanging loosely about the trellis,—as it is this flowing gracefulness that adds half the charms to this tribe of plants which they so profusely possess.

Most of the plants are set out for the summer,—little care will be required beyond seeing that they are not over or under watered. Some will be yet growing, and may be full of roots. If growth will probably continue for a while longer, pots a size larger may be furnished such. Whenever a shoot appears to grow stronger than the rest, so as to endanger compactness [illegible] desired shape, pinch it back; and [illegible]s should receive due regulat[illegible] the trellis, or they will sp[illegible] stiff trellis is a [illegible] the uninitiate[illegible]

Q[illegible]

THE DWARF [illegible]R.

BY C., ST. [illegible]O.

I am an advocate of the dwarf Pear. I agree entirely with the Editor of the *Monthly*, as recently expressed in an editorial article, that the standard Pear has merits of its own, with which the dwarf cannot and need not compete. It has its 'vices,' so to speak, as it has also its own 'virtues;' and there is nothing to be gained in disparaging standard [illegible] it.

I could [illegible]ate many reasons why I propose to stand by the dwarf Pear; but I will here insist on only one,—*its early bearing character.*

I am moved to this epistle by a remark of a speaker in your report of the discussion on Pears before the Pennsylvania Horticultural Society. You say:

"Mr. Schaffer, on visiting Mr. Saunders' late

nursery at Germantown, was struck with the superiority in size, shape, and healthfulness of the standards to the dwarfs."

It so happens that six years ago I visited Mr. Saunders' grounds, and had the great pleasure of a conversation with him about these very trees. He told me his attempts there had not been successful with dwarf Pears, because he had found from experience that dwarf Pear trees would not do on a dry sandy bottom, which his was; while he found that the standard did remarkably well on that soil. There was no disparagement of the dwarf Pear—as a class of fruits—in his remarks; but simply that there, in that particular spot, the soil was not suited to them. He then went on to explain, that the early bearing—the great merit of the dwarf Pear—he thought he could secure on standards by another system, as good as dwarfing the Pear on the quince stock. This was by regular summer pinching, which was to weaken the wood-producing principle, and throw the tree into a bearing state. The theory seemed to me very reasonable, and I was anxious to see some day the result of so curious an experiment. The trees appeared at that time to have been two or three years under this peculiar treatment, and were certainly beautiful specimens of sh[illegible]t.

Within th[illegible]ths, I was again in Phil[illegible] a jaunt intended [illegible]ilroad, which I [illegible]he old locomo-[illegible]along (pardon [illegible]tor, Mr. Edi-[illegible]easure of Mr. [illegible]ention, he being in Washington, [illegible] grounds under the care of a laboring man. But the trees were, as the gentleman said, "superior in size, shape, and healthfulness," to any thing I had ever before seen in trees of any kind, dwarf or standard, of the same age. There were the trees; but where was the fruit? I examined the trees closely, but could not see that any of them had borne much fruit of consequence, nor did they look as if they would for some years to come. They were planted about the same distance apart as dwarfs usually are, and were nearly touching each other,—most creditable specimens of very superior skill in pinching, pruning, and training; but instead of any weakening of the wood producing principle, they were growing away "as if for dear life," as our nurses used, in their quaint style, to say.

Now my observation is this: These trees, so 'large' and so on, I should suppose to be ten or twelve years planted on favorable soil, and treated to conditions expressly to make them compete favorable with dwarfs in early bearing; yet, probably in ten years had not certainly borne ten bushels of fruit between the some twenty and fifty trees. The precise number I do not now remember.

I would like to know how many bushels from the dwarf trees, planted as these were, in soil and under circumstances just suited to them, a good dwarf Pear-grower would not have had in these same ten years?

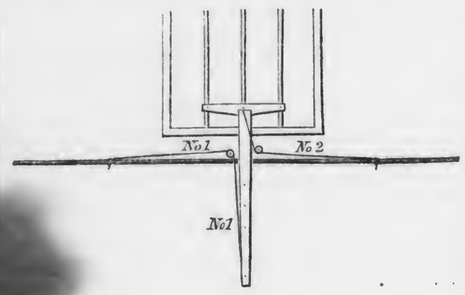
I have had half a bushel from a healthy vigorous Louise Bonne dwarf, the third year from planting, the tree six years from the bud; and with but thirty trees like this, I would get in one season more than I am sure ever came from Mr. Saunders' orchard during its whole existence.

It used to be thrown at the dwarf Pear-growers, "send us a barrel of Pears." All very good you 'standard' gentlemen; but send us some of yours. Here are your trees, but where are the Pears? The requisition might be supplied by "your heirs," as another of your speakers would say, perhaps.

VENTILATORS--AN ADDITIONAL NOTE.

BY D. ZIRNGIEBEL, NEEDHAM, MASS.

Your correspondent of New Jersey, may feel quite secure about the steadiness of our ventilators, as, by a very simple contrivance, they have withstood the hard blasts of the last two months.



A short cord, about as long as the whole opening of the ventilator, is fastened, one end to the sash, and the other end to the iron rod, and so follows the ventilator as it opens, to prevent its opening more than wanted.

Your correspondent's plan is certainly a novel one; only, if used as represented in the engraving, the ventilator cannot lap over, and would cause dripping in the greenhouse; and, if his apparatus or roller was of some length, it would require to be very stout and heavy, to work effectually.

THE ODORS OF FLOWERS.

BY A. W. HARRISON, ESQ., PHILADELPHIA.

Read before Pa. Horticultural Society, May 2, '65.

Among all the harmonies of nature, those which afford the most universal delight, which are appreciated and enjoyed by the most lowly as well as the most refined, but whose laws are dimly shadowed forth, and, as yet, unwritten in the book of knowledge, are the accords of fragrance,—the harmonies of sweet odors.

That these harmonies are governed by laws as fixed and beautiful as those that rule the play of colors in the prism, or the vibrations of sound and the relations of the diatonic scale, is a thought that must suggest itself to every discerning mind. Yet, while the latter have been the subject of profound study for ages, and have engaged the earnest thought and experiment of the artist and the man of science; but little, comparatively, has been done to develop the principles, and from them to deduce the laws which govern the actions and relations of those intangible, ethereal essences that affect, pleasurably or offensively, the olfactory nerve; that fill the air we breathe; that give their peculiar savor to the fruits, the viands, and the beverages we consume; that form an ever-present feature of our daily life.

The three elements of floral beauty are color, form, and fragrance. The flower which combines these elements in the fullest proportion, is the Rose, whose pure and penetrating odor has been regarded, from all time, as the type of all that was most delightful to the smell, most charming to the sense; it combines, in various and harmonious proportions, with a greater variety and number of odors, than any other elementary floral fragrance, and may, perhaps, prove to be the key-note of the future gamut of odors.

Next to this, in importance, is the Orange-flower; its scent is powerful, pervasive, and universally pleasing to the cultivated sense. It may fitly represent the fifth, or dominant of the scale.

For the third, or mediant, we might select the Vanilla, and so on, to the formation of the perfect scale.

As yet, however, science has thrown but little light upon this theme, and we must be content with mere conjectures, which, if time shall prove unsound, may yet serve as guide posts on the true road to a knowledge of what is now only an interesting but mysterious and perplexing problem.

In the domain of sounds, there are some discords so harsh as to shock even the rudest ear; in the domain of odors, likewise, we sometimes experience sensations of displeasure and disgust, that cause even the coarsest nature and the bluntest sense to revolt against them. All these arise from violations of the great law of harmony, which governs the universe and rules the spheres.

On the other hand, a combination, in true accord, of pure sweet sounds, a harmonious blending of the rich, fresh odors of the living world, bring never-failing delight to the highest organs of our being: they soothe and refresh the wearied body and the exhausted mind; they bring happiness to the humble, and the most refined pleasure to the man of culture and the votary of art.

As I propose to treat this subject mainly in the light of practice, and in its relations to commerce and the arts, I will not dwell longer upon this train of thought save to suggest the lesson which, as horticulturists and florists, we may learn from an honest study of the odors of flowers, and to point out some interesting facts, which have resulted from chemical research into the odorate principles of plants.

In the preparation of hand bouquets, baskets, table designs, and every form of floral grouping, while great attention is paid to the pleasing contrast of color and of form, the graceful disposition of leaflet and of flower, the [illegible]portioned outline and the artist[illegible]ould seem to be a comparati[illegible] norance, of th[illegible] mony of odor[illegible] command wh[illegible] joyment pro[illegible] binations of [illegible]

At times, th[illegible] elements are introduced; [illegible] pleasing in itself, and [illegible] happily with others of the same type and [illegible], are placed beside others of a widely different and opposing nature; the harsh contrast ensues, and the result is displeasing to the cultivated sense. Let us study this feature more carefully, and let not the true and original intent of [illegible] gay,—to refresh and delight the sense of sight,—be lost sight of; but let [illegible] highest type, whether simple or [illegible] distinctive, if not a leading feature in the [illegible]ous decorations of our homes, and in the adornment of our festive scenes.

We have spoken of the Rose as the type of the highest fragrance. There are several other odors, mostly quite different in character, yet harmoniously combining with the Otto, or essential oil of the Rose, and in any desired proportions; such are the odors of Sandal-wood, Patchouly, Turkish Gera-

nium, (used for adulterating the otto of rose), Voapivert, the Rose Geranium of our gardens, the rhode wood, or Rhodium, Sweet-brier and some others. The Orange-flower, too, has its kinsmen in the Lilac, Magnolia, Jessamine, Seringa. Daphne, Hawthorne, and many more, which will suggest themselves to the experienced lover of flowers. Of a different class, nearly related in fragrance, are the Verbena or Lemon trifolia, the Lemon-grass or Andropogon schœnanthus, the Citronella, and the fruits Cedrat, Limette, Lemon, Orange and Bergamot. Again, the odor of the Vanilla bean suggests itself plainly in the Heliotrope, Tonka-bean, and Gum Benzoin. In fact, the distinctive odor of the Vanilla is mainly due to the presence of Benzoic acid. In the best quality it is often seen in minute frost-like crystals on the surface, giving rise, in French, to the name "Vanille givrée," or frosted Vanilla.

The Tonka-bean contains another odorate principle, called Coumarin, which is also the dominant odor in our Sweet Clover and Vernal Grass, and plays a leading part in the composition of the now popular perfume called New Mown Hay.

We have said that the *laws* which govern the relations and combinations of odors are till now undeveloped and almost unknown; yet, in the practice of the a[illegible] some truly delightful harmonies [illegible]e result of a natu[illegible]ell refined by [illegible] to the art. As [illegible]n simple notes [illegible]undest combi[illegible]nter, drawing [illegible]m, through a [illegible] the highest conceptions of beau[illegible] the painted canvas, so does the perfumer, w[illegible] the simple elementary odors, arranged in accord[illegible] with a law of order and of beauty, unwritten yet not unfelt, produces an endless and ever-varying round of fragrant harmonies. To him the simple, sw[illegible]ted flower is only a vehicle for the communic[illegible] of odors to the nostril and the brain. He [illegible] it as the composer analyzes a musical score, or [illegible] a mineral compound. Like them, too, [illegible] combines; and from out his cop[illegible] the alembic of his brain, there come forth compounds of beauty, that seem due to an almost creative power, so wonderfully fragrant, so strikingly do they resemble the flower they counterfeit.

To him the apparently simple odor of the Heliotrope resolves itself into the elements of the Rose, the Jessamine, the Orange-flower, the Vanilla-bean, the root of the Florentine Iris, the Balsam of Peru, the Clove and the Bitter Almond. The pure and delicate scent of the Mignonette suggests the perfume of the Sicily Orange-peel, the Jessamine, Tuberose, Acacia, Violet, and Vanilla-bean.

With his pallet (if I may use the phrase) of simple odors, he reproduces all the fragrant combinations of the world of flowers, and adds to to them other harmonies purely ideal; yet, like a thing of beauty, they are a joy forever.

The limits of this Essay do not permit me to elaborate this train of thought as I would desire, and I will pass to the consideration of a more strictly practical branch of the subject.

Much interest has lately been excited by the lectures given before the Royal Horticultural Society of London, by Mr. Eugene Rimmel, and Dr. Septimus Piesse, on the materials used in the perfumer's art, etc., illustrated by the plants producing them, the principal mechanical apparatus employed, and the various processes adopted for obtaining and refining their essential principles or elementary odors. The animal world, too, was represented in the curious, powerfully scented, tumor of the Musk Deer, the resinous exudation of the Civet Cat, and the granular hemorrhoid of the Sperm Whale, known as Ambergris.

But the chief interest of these lectures was in their descriptions of the celebrated flower-farms of southern France, which are the principal sources of supply of the finer floral odors consumed in the perfumer's art.

I visited the prominent seats of these manufactures in 1853, and from notes taken on the spot, I contributed to the *Working Farmer*, in 1861, the results of my observations. As they have probably met the eyes of few, if any, of my present hearers, I make no apology for now reproducing them, with such slight modifications as my topic suggests.

I would premise that the articlewaswritten mainly from a commercial point of view, as the writer, at that time was an entire novice in horticultural art and knowledge, and was interested mainly in the manipulative processes.

THE FLOWER FARMS OF FRANCE.

The growing of flowers for the production of fine essential oils and for medicinal purposes, is an imimportant branch of horticultural industry in those departments of France bordering upon the Gulf of Lyons and the Mediterranean Sea, and especially in the southern portion of the Department of Var, adjoining the former Italian, but now French, province of Nice. There are extensive factories in Nismes, Montpelier, Morbihan, Nice, and some lately established across the sea in Algeria. Smaller

establishments are found at Mentone, and all along the Genoese Riviera; but the great and acknowledged centre of this branch of industry, is the town of Grasse, situatsd about 75 miles E. N. E. of Marseilles, a few miles inland, and its seaport Cannes, well known as the winter residence of Lord Brougham. It would be difficult to state, with any degree of accuracy, the product of the flower-fields of this interesting region. There are over sixty factories in Grasse, which is a flourishing place of 12,000 inhabitants, giving employment in the various departments of field and in-door labor, to fully 5,000 persons. Many manufacturers grow their own flowers, others buy them daily in the market, and still others are supplied by contract. The latter system prevails among the leading houses. Contracts are made, at a fixed price for a term of years, for the total product of a farm, at rates varying from 8 to 10 cents per kilogramme (2 1-5 lbs.) of Rose-leaves, up to $1 for Tuberose-leaves, and even higher for Violet-leaves; the latter being mainly produced at Nice. The average prices are about as follows:

Rose-leaves 8 to 10 cents the kilogramme.	
Jessamine-leaves 40 to 50 cents the	do.
Orange-leaves 50 cents the	do.
Acacia-buds 60 to 80 cents the	do.
Tuberose-leaves $1 the	do.
Violet-leaves 80 cents to $1.30 the	do.

These are the leading garden-flowers used in Grasse; only small quantities of the Jonquil, Narcissus, Hyacinth, Mignonette, etc., are produced. A great breadth of land is devoted to Lavender, Rosemary, Thyme, Sweet Marjoram, Cherry Laurel, Sage, Balm, and other medicinal and culinary plants, which are sold at much lower rates than the products of the above-named flowers.

The preparations derived from all these plants divide themselves into four classes:—Essential Oils, Distilled Waters, Pommades and Oils, and dried leaves and flowers. It is true that considerable quantities of Extracts of the Pommades are manufactured and sold, but they are generally of inferior quality, and will not compare with those produced by the great perfumers of Paris and this country.

The great *bulk* of Essential Oils produced consists of Lavender, Rosemary, Thyme, Sage, Spike Lavender, and Sweet Marjoram, all of a terebinthine nature. The most *valuable* products of any considerable amount, are the Essential Oils of Neroli and and Petit Grain. The former is the result of the distillation of Orange-flower water, from the petals of the flower of the Bigarade or bitter orange (the sweet or Portugal Orange yielding a somewhat inferior product), and the latter is obtained from the green leaves of the same tree. The price of Neroli varies with the season, from $30 to $45 the pound, of Petit Grain from $8 to $12. These two oils are used extensively in the composition of Cologne water, and in combination with Bergamot and Rosemary, give its distinctive character. The Orange-flower water is consumed in immense quantities in France, in the "eau sucrée," so universally drank in the hot seasons; this, by the way, is the only form in which a Frenchman will drink water at all.

The Bigarade Orange tree also furnishes a rough skinned, bitter, inedible fruit, from the rind of which is expressed an inferior oil called "Essence Bigarade," often used for adulterating the finer oils. The tree requires 10 years to mature, and twenty to attain perfection, and yields an average of 17 pounds of flowers per annum.

Rose water is also distilled in large quantities. A result of its distillation is a very minute proportion of Otto of Roses of the very highest quality; it appears in small supernatant grains or drops, which are carefully skimmed off and rectified. It is superior to the famous Kizanlik or Turkish Otto, and, like it, congeals at ordi[illegible]mperatures in beautiful, transpar[illegible] at the celebrated manufact[illegible] in all things t[illegible] containing abo[illegible] $550, or over [illegible] of export, the [illegible] but is reserv[illegible] failure of th[illegible] finish to the [illegible] Mai," (*Rosa centifolia [illegible]alis*), or double May Rose, is the one univer[illegible]grown.

Another very costly article, of which less than an ounce had been produced in Grasse at that time, is the Essential Oil of Jessamine. Its existence in the flower was long [illegible]outly denied by the distillers, although they [illegible]ed to prove what other [illegible] owed its odor. In 1853 an Algerian [illegible] a minute quantity, which cost [illegible]med, at the rate of 17,000 francs [illegible], or nearly $100 the ounce. It has, since then, been produced at a cheaper rate, but still too dear for commercial purposes. The wild Arabian Jessamine is grafted on the cultivated plant of the same species, acclimated, and bears for many years, if not winter killed, yielding from 90 to 150 pounds of flower petals per thousand plants. It is closely trimmed in spring and deeply covered

in winter. The caterpillar is its most formidable enemy.

A most important branch, and one in which great rivalry exists, is the preparation of perfumed Pommades and Oils, which have a twofold use: first as bases for the finer kinds of hair oils and pomatums, and next as a medium for obtaining spirituous extracts for the handkerchief and the toilet; such as Lubin's well-known "Extraits pour le mouchoir." Their preparation is the most curious and interesting feature of the Grasse establishments.

The Pommade 'body,' which is prepared in winter, is composed of 1 part of beef-suet, and 2 parts of leaf-lard, (except for Jessamine and Tuberose, which is mainly lard, hardened by mutton or veal-suet), thoroughly hashed, washed in several waters, and, among the best manufacturers, washed several times in Rose-water, to deprive it of all unpleasant odor, then carefully melted and stored away in huge tin cans, in airy, cool vaults, for use in the season of flowers. Another preparation, called "corps dur," or *hard body*, is made of beef-tallow only, and is used in the manufacture of stick pomatums. For the Oils, the inodorous virgin olive oil is used, expressed from olives just before their maturity.

The busy operations of the year commence with the Rose se[illegible] impregnating the [illegible] the floral odors, [illegible], the other by [illegible] first is employed [illegible] the Rose, Or[illegible] sensitive, ethe[illegible] rose, Jonquil, [illegible] plants, which will not endure [illegible] a moderate degree of heat.

And first, by [illegible]. About 100 kilogrammes (220 lbs.) are put into a tin planished copper vessel, placed in a copper water bath, melted at a low temperature, and charged, at day-break, with a certain quantity of the freshly gathered flowers, which are stirred constantly during the day and night, the mass being kept only warm enough to maintain a semi-fluid state. About midnight it is removed from the fire, poured into strong bags, made of fish cord, and subjected [illegible] pressure in large, perforated iron cylinders, standing vertically upon marble bed plates, which are gently warmed, to prevent the congelation of the exuding mass. Next morning fresh leaves are added, and the process repeated daily, until the desired strength of perfume is attained; the pommade is then poured into cylindrical tin boxes and sealed up for shipment.

The Oils are treated in the same manner as to maceration, but are filtered instead of being pressed.

The process of 'Enfleurage' is as follows: Large numbers of 'chassis' or sashes are prepared, about 2½ feet long by 1½ feet wide, the frame itself being 2 inches wide and 1½ inches thick, holding a stout plate of ground glass, and resembling in construction a large school slate. Those for the Oils are about 4 by 2½ feet, proportionately heavy, and, in place of the glass, have coarse iron-wire net-work. The large factories have several thousands of each of these frames.

Upon each side of the glass the Pommade is thinly spread, and the surface is channeled or furrowed with a four-tined square-pointed wooden fork, so as to present the utmost surface for the absorption of the odor from the flower-leaves, which are thickly sprinkled upon it. The frames are successively charged with flowers, and piled one upon another, up to the ceiling. The leaves, confined between two strata of pomatum, wither, and yield up their odorate principle, which is rapidly absorbed. Daily renewals of the flowers are made, until the proper strength is obtained. The perfumed Pommade is then scraped off very gently, melted in a water-bath, and poured into cans.

In preparing the Oils, coarse, heavy, spongy cotton cloths, made especially for this purpose at Marseilles, are saturated with olive oil, and spread upon the netted frames; flowers are then strewn thickly upon them, and they are piled up in like manner as the Pommade frames. When sufficiently charged with the odor, the oil is expressed from the cloths by powerful levers.

Many hundred weights of flowers and herbs are dried annually, are variously used in medicine, in cookery, and in the composition of scent-bags, cachous, fuming pastils for the sick chamber, and kindred compounds of the perfumer's art.

The Parmesian or double Violet is grown mainly at Nice, under the shade of trees, and yields a delicate and delightful perfume. It was the favorite odor of the Athenians under Pericles, and is now one of the most fashionable scents of the Parisian *beau monde*.

The flower-farms receive the highest culture. Underdraining was not practiced at the period of my visit, but great attention was paid to irrigation. In some fields at Cannes there were complete networks of irrigating, tubes, substantially laid in cement. A constant warfare is waged upon insects, and each plant has its particular borer, grub, or bug. "Eternal vigilance is the price of" success.

The heat in summer is intense, though tempered by the sea breeze; and the winter is, at times, as rigorous as at Washington or Richmond.

Male labor costs 35 to 40 cents per day, and female 15 cents.

While visiting this interesting region of flowers, I was often inwardly reminded of the vast and undeveloped field in our own sunny climes, and of the possible future of commercial floriculture in the tropical regions bordering upon our Mediterranean Sea,—the Mexican Gulf. There the wild-wood teems with the fragrant Jessamine and Magnolia; the shady pastures are redolent of the timid Violet; the gardens load the air with the far-wafted perfume of the Rose and the Orange-flower, and every thing that is pleasant to the smell. But a blight was upon the people, and all the graces and beauties of nature were darkened by a pall of unrequited labor. It may not be a vain hope,—I trust it may prove a prediction to be soon fulfilled,—that when that fair land shall be fully redeemed from the lethargy, the paralysis of human slavery; when it shall be everywhere open to the intelligence and energy of the Northern mind, the free and self-reliant labor of the millions disentralled, it shall then become the great flower-garden, not only of America but of the world.

FAMILIAR BIRDS.

BY J. P. NORRIS.

IV.—THE ROBIN.

Well does the Robin come under the title of "Familiar Birds." We venture to say that no bird is better known. What school-boy does not know the Robin? Aye, right well can he point him out to you. We refer particularly to children of a tender age. It seems that budding trees, green grass, balmy air, and the arrival of the birds are the realization of what we know as 'spring.' The Robin makes himself very conspicuous among our April birds. A writer has remarked, that April is essentially *the* month for Robins. We agree with him. Later in the spring he is busily occupied with building his nest and rearing his brood. The same applies equally well to him during the greater part of the summer; but in the month of April his cares have not begun, and he pours forth in charming melody his thanks to the Great Giver of all things. Would that his example might be followed more than it is by men!

The Robin (*Turdus migratorius* of Naturalists) is a very different bird from his English name-sake, Robin Red-breast. Compare the two,—see the superior size, handsome plumage and richer voice of the American bird, and then say, if you can, that the English bird is the better of the two. And yet a certain celebrated ornithologist had the assurance to say that all birds found in America were merely degenerated species of their true types found in Europe, attributing the degeneration to the climate, etc.! But we must pardon his ignorance, when we consider that he wrote many years ago. Besides, what could we expect from an individual that was so conceited as to have complacently declared, when he had finished his history of the "birds of the world," that no more of any account would hereafter be discovered; or, rather, that he had described and figured all the birds that existed in the world.

The Robin is one of the most familiar of our birds. He seeks the protection of man, and builds his nest within a few feet of his door, or on the very piazza railing itself. He renders man great service in the destruction of innumerable caterpillars, bugs, and insects; and all he asks in return is a few cherries, strawberries, or other fruit; and well does he deserve them, and yet how seldom is he permitted to enjoy them. He is driven from the cherry-tree with guns, clubs, and other weapons, and in many instances ruthlessly killed. What ingratitude for his services! [illegible]ns it is. Men allow him to toil [illegible] in the good work of ridding [illegible] when he, in [illegible] his pay, all hi[illegible]

Concealmen[illegible] object with h[illegible] he may be t[illegible] in a not very [illegible]; and b[illegible] side, his mate does not wait for [illegible] but, seemingly in a great hurry, deposits her eggs, which are four in number, [illegible] of an indescribable bluish-green, or greenish-blue. We have never been able to decide which it is.

In a short time the eggs are hatched, and then begins the busy era in the life of the Robin. Four helpless little mouths must be attended to; and so very greedy are the little ones, that it keeps their parents busy all day long to supply them. How [illegible] must hate the Robins!

If we were asked to give a type of the insectivorous birds, we should point out the Robin. Reader, protect the Robins, they are your best friends, if you love fair flowers, good vegetables, and luscious fruit. They will repay you tenfold.

NEW EVERGREENS.

BY WALTER ELDER, PHILADELPHIA.

While on a visit, last fall, to the Nurseries of Hoopes & Brother, Westchester, Pa., we were shown some of their specimen Evergreens, The *Cedrus deodara* is the largest tree of its kind we ever saw, and, although in an exposed situation, it is quite hardy; its growth is too rank, and its branches are too much expanded and too far apart. If it had had the same skillful pruning as those of Mr. Landreth's, at Bloomsdale, it would have been a very superb tree. It is a choice evergreen to mix with others, its pale foliage contrasting well with those of darker hues. The *Cryptomeria japonica* is a large tree, and hardy upon a bleak spot; its singular habit and foliage contrast will with other evergreens upon a lawn. *Libocedrus decurrens* is a most beautiful evergreen; it may be ranked between Biota and Arborvitæ, and handsomer than either. The *Cephalotaxus drupacea* and *Fortunii*, are singular-looking dwarf evergreens, the branches are all of a pendant habit, and the foliage most singular, both in form and color, and so plentiful that no part of the wood is seen; they are like little fairies, clothed with mantles of green. The *Biota orientalis aurea*, or, as it is commonly called, Golde[illegible] a most compact and [illegible] *Biota macrocarpa*

[illegible] rare trees at [illegible] collection that [illegible]re to examine. [illegible]re does not [illegible] to be placed [illegible]culture, they [illegible] in importing and gathering together r[illegible]ns, and other things, and a visit to their charming grounds in the summer season, ought to be memorandumed on the note-book of every lover of trees. One of the best *Picea grandis* we have seen, is there, and proves itself to be extremely hardy; and —if this be possible—*extremely* beautiful.—Ed.]

MAMMOTH TREE--SEQUOIA GIGANTEA.

BY W. D. BRACKENRIDGE, GOV[illegible]RD.

I observe in the number of the *Monthly* for May, that at a "Discussional Meeting of the Pennsylvania Horticultural Society, held March 7th, 1865," that among other evergreen trees brought to the notice of the meeting by yourself, was the Sequoia gigantea—or "Big tree of California—where you make the remark, that "it appears to suffer from a mildew in our eastern climate;" and I have not the smallest doubt of the correctness of your statement being applicable to it in many localities east of the Rocky mountains; yet, in the vicinity of Baltimore, it promises to succeed well, and as an instance of its rapidity of growth, great beauty, and hardiness, I would particularly notice a single specimen, growing on the lawn of that most liberal and persevering patron of horticulture, Captain Augustus Pracht, whose residence and garden are situated at the corner of Townsend and Fremont streets, which is about the highest point in the city, and much exposed to the keen N. W. winds. Four years ago the Captain planted this tree, then from 15 to 18 inches high,—now it is upwards of 7 feet in height and 5 feet in diameter near the base, perfectly symmetrical in form, dense in growth and of a deep green color, which was little altered by the severe cold weather of last winter; while a Cryptomeria japonica, a few yards from it was killed.

The Big tree, like the Cryptomeria, keeps growing during the whole of summer, and until hard frosts set in. Last summer the Captain's tree set eight seed cones; these are now ripe, containing seeds apparently perfect,—of which you may judge from the sample herewith transmitted,—and there is a prospect of a much larger crop next spring. The conditions which appear to have aided the present individual in attaining its luxuriant growth, appear to be a deep friable loamy soil, in conjunction with an open airy exposed position; and this latter maybe the cause why it is free from *mildew.(?)*

There are other fair specimens of this tree in the vicinity of Baltimore which promise well; but none of them so finely developed as the one described above.

The Cryptomeria japonica, of which you gave a figure and description in the first volume of the *Monthly*, (Please refer to the page), [We repeat the illustration again, which will be better than the reference.—Ed.], planted also by the Captain, but now belonging to another gentleman, is a noble specimen, 20 to 30 feet high, and furnished with branches down to the ground. To have this tree thrive well, a light soil and partial shelter is necessary, while that other beautiful evergreen—the Cedrus deodara—like the Big tree, requires a heavier soil and a more exposed situation. On my grounds there is a Deodar 9 years old, over 20 feet high; with a diameter of 12 feet of branches at the base, the leading shoot being as straight and perfect as any European Larch; and in Harford Co., of this State, I am assured there are specimens of much larger and finer than my own.

[CRYPTOMERIA JAPONICA.

THIN SEEDING AND SELECTION.

BY A. C.

These two points in Agricultural economy have been much discussed and experimented upon. Discussion, however, cannot settle any such question; and experiment, unless systematically and perseveringly conducted, is of little value. An intelligent English farmer, Frederick F. Hallett, of the Manor House, near Brighton, had his attention drawn to some points of resemblance between animal and vegetable life. The utility of a pedigree in stock was established. The progeny of a fine animal belonging to a fine stock, is likely to be fine; while the character of the progeny of a fine animal belonging to an inferior stock, will be very uncertain. In other words, by careful and skillful management in breeding, through successivegenerations, fine qualities may become hereditary. He asked himself whether this principle did not also hold good in vegetable life. He thought it worth the trial. The result of his efforts is thus stated in a recent work, entitled "Agriculture, Ancient and Modern," by the Old Norfolk Farmer:

"This gentleman farms altogether about 600 acres, and possessing ample means for carrying out his plans, he has established a system in the culture of Wheat, which, from the wide-spread pub- [illegible] number of persons [illegible] his plan experi- [illegible] also generally [illegible] complete revolution [illegible]"

[illegible] plants is thus [illegible] after a Wheat- [illegible] the ground. It begins to throw [illegible] stems, upon the first appearance of each of which, a corresponding root-bud is developed for its support; and while the new stems *tiller* out flat over the surface, their respective roots assume a corresponding development beneath it. This process will continue until the season arrives for the stems to assume an upright growth, when *tillering* ceases, and the whole vital power of the plant is concentrated upon the production of upright ear-producing stems.

"The extent to which horizontal development may take place, is seen in the fact that the stems produced from a single grain, having perfect freedom of growth, will, in the spring, while lying flat upon the surface, extend over a circle three feet in diameter, producing at harvest fron 50 to 60 ears.*

"That vertical development is dependant on horizontal growth being unimpeded, has been abundantly shown to me, in the observations I have made upon the growth of Wheat under different conditions.

"This fact is pregnant with practical inferences, bearing upon the present mode of culture, which by the use of superfluous seed, crowds the plants and produces ears of only one-half the natural size.

"It has, for the last twelve years, been my conviction that a good pedigree is as valuable in plants as in animals; and that in the careful rearing of seed that has this qualification, lies our only means of materially increasing the produce of the cereals. We can not only perpetuate the advantages presented to us in an individual ear, but by the accumulation of selection, make further advances in any desired direction."

By "accumulation of selection," he means the selection of the best seed from the best plants, year after year. By this method, "in four years," he succeded in increasing the size of the ear in the following ratio:—

	Length. inches.	*Containing grains.*	*No. of ears on finest stool.*
1857. Original ear,	4¾	47	—
1858. Finest ear,	6¼	74	10
1859. Finest ear,	7¾	91	22
1860. West season,	—	—	39
1861. Finest ear,	8¾	123	85

"Thus, by means of repeated selection and thin seeding, the length of the ear was nearly doubled, the contents nearly trebled, and the *tillering* power of the seed increased five-fold. In the present year (1862), he has 90 acres seeded with from one peck to one bushel per acre, according to the period of sowing. His land is of the most ordinary kind; the soil about 6 inches deep, over chalk. One field was said to be incapable of growing Wheat at all; yet on this very field, with a seeding of one peck per acre, a crop of 48 bushels per acre was raised this season." The writer saw this, with the other crops, and can bear testimony to the remarkable length of the ears, stoutness of the straw, and fineness of the grain.

As the product of each seed which is planted is in proportion to the size of the stool it produces; and as the stool increases in diameter continuously until checked by the winter-frost; early planting is best; and consequently, the earlier the planting, the more should be the space allotted to the growth of each stool. "Hallett says, that if the Wheat is planted in September, it should be deposited in single grains, 9 inches apart every way; which would be equal to one bushel to 6 acres. If planted later, the grain should still be deposited singly, but at a less distance apart. What early planting will do, he shows by an experiment, in 1860,—a year of signal failure in the Wheat crop:

"The Pedigree Nursery Wheat, planted singly, September 9, 1859, in holes 9 inches apart every way, produced in 1860, notwithstanding the very disastrous character of the season, 1¾ bushels on 698 square feet of unmanured land, or 108 bushels per acre. He recommends the following apportionment of seed to the period of sowing, the grain being dibbled singly in holes not exceeding 1½ inch in depth:—

	Rows. Inches ap't.	*Inches ap't in rows.*	*Quantity.*
In August or early in September,	9	9	1 bu. to 6 acres
In September,	9	9	do. 4 "
In October,	6	6	do. 2¾ "
Tow'ds end of October,	6	4	do. 2 "
After October,	6	3	1½ bu. to 2 "."

This recommendation, it should be borne in mind, has reference only to English planting. The English climate, compared with that of the Atlantic States, is humid, consequently seed should be planted deeper here than there.

The saving of seed, on Hallett's plan, is considerable. "On 100 acres, 1 bushel to 6 acres, instead of 2 or 3 bushels per acre, which his neighbors are in the habit of employing, creates a saving of 180 280 bushels.

"Such is the system pursued by Hallett, whose proceedings have attracted the attention of the Agricultural world, not only in England, but in France, Germany, Spain, and the British Colonies,—a system illustrating the extraordinary productiveness of the Wheat-plant, and the best means for its development."

It should be mentioned that the Nursery Wheat, the kind selected for this experiment, is "in its original states, not a very prolific variety. It is a red wheat, with a thin mellow skin, and it works kindly under the stones. It is a favorite with both farmers and millers in the districts round London."

Hallett has been engaged in the attempt to fix a pedigree upon this wheat for seven years. Whether he has succeeded in this part of his experiment, time must determine. His experimental operations were conducted with a degree of care not compatible with ordinarily good farming. But, before he called public attention to the subject, he raised several crops by ordinary culture, using his improved seed, but no longer selecting the best. This he did in order to discover whether the improvement was likely to be permanent, or whether, without continued selection, and extra culture, the plant would manifest any tendency to revert to the condition of the stock from which it was derived. His crops, under these circumstances, yielded from 54 to 57 bushels per acre, with no falling off. The common crop of the neighborhod was from 32 to 36 bushels per acre.

Other farmers, who have tried his seed, make good report of it, and all agree that, in productiveness, is unprecedented. Even his opponents do this; for, like all men of progress, he has opponents, who first denied that he had effected any improvement in the prolific power of Wheat; but now, being forced to give up that point, they say he has done nothing but what had been done many a time before; moreover, while they reluctantly admit the quantity, they condemn the quality of the grain, and laugh at the talk about pedigree.

But Hallett has always made known that he selected a red wheat for his purpose, and that it remains to be red wheat still; as, according to a leading principle of his, that like produces like, was inevitable.

Elihu Burritt, who has published an Agricultural Tour through England, which he performed in 1863, mentions his visit to Oundle, in Northamptonshire, on market day. He dined at the Inn with the farmers. He says:

"During the conversation at the table, a farmer exhibited a head of the Hallett Wheat. I never saw any thing to equal it in any country in which I have travelled. That wheat is creating no little interest among English grain-growers."

Lord Burghley, who had tested its properties, thus describes it, in a speech before the Northamptonshire Agricultural Society last summer:

"At the Battersea [illegible] was attracted to [illegible] which I though[illegible] England. For, [illegible] grow corn with [illegible] Wheat here, and [illegible] I went to the pe[illegible] and having be[illegible] only one seed [illegible] Hallett, of Br[illegible] system, I plante[illegible] tions: one grain in a hole, the holes 9½ inches apart, with 6 inches between rows. To satisfy myself on the subject, I also planted some according to Stephens' instructions, who said 3 grains in a hole would produce the most profitable return. I also planted some 2 grains in a hole. I sowed the grain at the end of last September, on bad land, over an old quarry, and, except some stiff clay about the bottom of it, there was nothing in it good for Wheat. The other day I counted the stalks of all three. On Mr. Stephens' plan, of 3 grains in a hole, there were 18 stalks; with 2 grains in a hole there was about the same number; but with 1 seed in a hole, the lowest number of stalks was 16, and the highest 22. I planted only about 1½ acres, as a trial, and when I left home, a few days since, it looked as much like 8 quarters (64 bushel) to the acre, as any I have seen:—the ears are something enormous. I would certainly recommend every farmer to make his own experiments; for, if it succeeds, it will prove a great economy of seed, and *drills to distribute it fairly are to be had.*"

* The writer of this notice saw a plant of Wheat at Hallett's farm which measured 5 feet 8 inches across.

The Gardener's Monthly.

PHILADELPHIA, JULY, 1865.

☞ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

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COLOR--AS IT AFFECTS HARDINESS.

In an Essay, read before the Pennsylvania Horticultural Society, last spring, by the writer of the present article, and which essay we shall take the earliest opportunity of publishing, it was pointed out as a probable fact, that the hardiness of plants, after they had resisted the cold of the mere freezing point, depended entirely upon their capacity to retain heat. The evolution of heat was, if not the object of the plants existence, at least its main office in life,—whatever assisted the plant in this heat-producing business, was a very welcome aid to its dignity.

We were very much pleased to read a paper in [illegible] orary, the *Horticultu-* [illegible] views taken in the [illegible] her in usefulness, [illegible] he sources of heat [illegible]

[illegible] the paper, shows [illegible] olors get paler,— [illegible] become weakened, and the power to absorb heat is lessened, plants lose color. Different colors have different powers of absorbing heat, in the following order:—black, brown, green, red, yellow, white. Mr. S. has found practically that dark-leaved and dark-barked varieties of fruits are more hardy than light ones. In grapes, black varieties will prove hardy when white ones fail,—and so on throughout the whole range of the vegetable kingdom.

Mr. Stayman is undoubtedly correct in his theory. The variegated Euonymus and the variegated Box die, when the plain green-leaved varieties live without injury through the winter; but we frequently see where plants from any cause lose their color in summer, they lose vigor and strength, and are unable to undergo, not merely cold, but any check to regular growth. Last year, for instance, we saw several thousands of Norway Spruce, set on ground extremely poor; by their side was set another lot in good fertile soil. After passing the severe winter, the plants in the poor lot were very *yellow in tint*, and on transplanting nearly all died; the others kept a nice dark-green all through winter, and all transplanted without any loss.

There is a grave practical matter attached to these discoveries. We have heard niggardly nurserymen argue in favor of their poorly grown trees, that it was to their purchaser's interest to have such trees, as they would naturally do better taken from poor soil into a rich one; but depend upon it, when poverty of soil is of such degree as to produce loss of color, there is far more risk of failure than in the hearty green-looking tree.

But we must not forget that there are some other good points to be looked after besides mere hardiness. Pale-fruited varieties have, as a rule, a delicacy and richness of flavor, which the darker-colored ones never have. White grapes are less harsh than dark ones; white strawberries are sweeter than red ones; and few but would prefer a Brincklé's Orange Raspberry for flavor alone, to any other variety grown. Needham's White Blackberry is perfectly delicious, but bears so few as to be very little cared for, and so on with other things; and we may gather from this that, for artificial cultivation, where some protection is afforded against extremely unfavorable circumstances, it may be worth while to raise the more delicate and superior flavored varieties in preference to the more vigorous and inferior ones.

We are very glad the subject has been fairly opened. It has often been a subject of debate, for what were made the beautiful colors of flowers, that make the world a paradise? Different degrees of heat are perhaps necessary to the proper preparation of the several parts of fructification,—or, the juices of plants being of different natures, so much as to be equally affected only by different temperatures, it may take different colors and shades of colors to produce equally necessary effects. When the proper examinations have been made, we shall no doubt have explanations as to the why different colors prevail at different seasons among flowers, as white and blue in spring, or yellow in autumn,—or in different countries, as in the Alpine summits of mountains, where bright and beautiful colors always prevail; why the birds of cold countries are so dull in color, and those of warm countries so gay; also it may be discovered why certain flowers only vary under the florist's hands in color in certain directions. For instance, from blue or pink, white varieties will come; but from white to blue is rare, if ever; while from white to rose is occasional. All these, and many more like problems that could be named, will no doubt be satisfactorily solved when the relations of heat to color are mutually understood.

For the present we take leave of the subject by observing, that few things in our estimation have been brought up by the course of events likely to be of more value to the intelligent and progressive horticulturist, than the one now discussed.

FORCING STRAWBERRIES.

We have been censured in some quarters for our advocacy of cheap glass structures for growing the foreign grape. It is said the result is that so many people are led to half do things, and "whatever is worth doing at all is worth doing well." Our reply is, that "doing things well" deceives thousands. "Doing things well" depends on what the object is. If that is accomplished fully, then is the thing "done well."

When the *Monthly* first appeared, we found every one, with very few exceptions, afraid to build a vinery. "We cannot afford from one to three thousand dollars," we were told, "and then to have to employ very expensive skill to manage them afterwards." The general idea was that it was to be either this or none: "what was worth doing at all was worth doing well." We undertook to show that *very good grapes* could be grown in a house costing not more than from one to three hundred dollars, and without any long probationary exercise at learning the art. The houses might not last as long,—might not be as pretty,—might not have the conveniences for producing the very finest samples,—might not be as successful as those under first-class gardening skill,—but they would produce *good grapes*. This was the object,—and the thousands that followed our advice "did it well."

It is all very true, that to spend a thousand dollars on a grape-house that will last a hundred years, is best in the "long run." It is "worth doing at all" in that way, and is "worth doing well" *when one has the money;* but to him who has but one hundred, and would have it last 20 years, or have none, it is just as well "worth his doing," and it would be done equally "as well."

When we look on the hundreds of graperies that have been erected in accordance with our views, and the great numbers who, commencing with little grape-houses, managed by themselves, have, as they accumulated more wealth, advanced to the higher branches of gardening, opening hundreds of situations for first-class talent, that would otherwise never have been thought of, we are compelled to believe that our efforts have been of the greatest value to the whole community, and to the very best interests of the highest eminence of the art.

We think we are on the eve of a similar revolution with regard to the Strawberry, as we were with the Grape. We can have Strawberries very nearly all the year round, and at a cost no greater than the cheapest of cheap vineries. There is one thing to be remembered in forcing Strawberries, they must be kept continually but a few inches from the glass; and in the arrangement of the houses, this must be borne in mind. Fortunately, as the Strawberry is but a dwarf grower, the shelves can be set so high above one another, that the pot and the plant can be tended very well, from under the stage as it were. All the watering, syringing, and so on, can be done from the under side. This will permit of the stage being about two feet from the glass, and the house can be built in the regular way as for a vinery, by the common fixed-roof principle, except that perhaps the angle must be a little sharper, or, as we would technically say, with a greater pitch.

We think when Strawberry culture under glass becomes a general art with us, fruit will be produced which, for size and quality, will astonish those of us who have only [illegible] open-air culture. In gener[illegible] weight to the [illegible] is rather owin[illegible] skill in raising [illegible] ting them aft[illegible] enormous siz[illegible] delicious flav[illegible] fruit,—is almost entirely wanting in our, even when the very same varieties are brought under trial. House culture will probably remedy all this. With the elements then under perfect control, we can regulate the requirements necessary to their perfect production, and Strawberries raised under glass be as far ahead of those raised out of doors as the hot-house Grape now is to the native one. One great advantage Strawberry forcing will have over other fruits is that it never requires more heat than 55° or 60° to bring it to perfection; very simple heating apparatus will therefore be necessary to produce extra fine results, and for ordinary purposes; say to have Strawberries by the end of March or in April, no more artificial heat than the glass itself affords will be necessary.

We expect before long to see the Strawberry pit quite as common in gardens as the Cauliflower pit, or common hotbed frame.

THIN SEEDING AND SELECTION.

At our request a friend has communicated for our pages a paper on Hallett's improved Wheat, as suggested by his own observations, and the great interest the subject has excited in England. Although, in one sense, a purely agricultural topic, we were anxious to have the matter appear in our pages, as it introduces the whole ground of selection of varieties and close cropping,—a field of great interest to all our readers.

It is scarcely possible to conceive the limits of the power of art to increase the productiveness of crops or the improvement of varieties, by judicious care in selection of seed, and attention to the individual health of the plant. Some slight care is bestowed on the matter by some of our farmers, who select the largest ears of corn for seed,—by others, who use large sets for potatoes, instead of small ones,—and by a very few more who, after getting the finest seeds or sets, permit the individual plants to have room to develop themselves properly. But these instances are rare. It is the rule to hear objections to thin seeding; and the selection of proper seed is without general system, or more than a general impression that heavy seed is the best.

We may learn a lesson from more barbarous nations, particularly from Japan, [illegible] to be superior [illegible], that they get [illegible]e area than we [illegible]ibuted this ex- [illegible] give the saving [illegible] we think that not [illegible] this one point alone does their eminent success depend; but that thin seeding and proper selection have much to do with these high results.

Their whole system of dwarfing plants shows that they are intimately acquainted with the fact that a constitution can be given to plants by habit, as well as formed for them originally by nature. Fortune says: "They select the *smallest seeds* from the smallest plants,—the most stunted suckers from stunted trees. Then they twist the stems, and check the flow of sap in every way. The pots in which the plants to be dwarfed are set, are narrow and shallow, so as to hold little nutriment; no more water is given than will actually keep them alive;" and other things are enumerated, until, as he states the result to be, "nature generally struggles against this treatment for a while, until her powers of resistance seen to be exhausted, when she quietly yields to the power of art," and the trees remain dwarf trees, satisfied and contented for ever after; awarding to its persevering breaker in the tribute of a sort of Rarey amongst horses.

The tendency of seeds is to perpetuate existing constitutions, whatever that may be,—diseased plants tend to diseased progeny; vigorous ones strong ones; and productive ones produce in turn productive races,—all as a general rule.

On the other hand, the Japanese seem to understand the great importance of permitting the plant to develop itself properly when the heaviest crops are desired. The same writer says, "on the higher lands of Japan wheat and barley crops are extensively cultivated. The seed is not sown broadcast as with us, but in rows *two feet three inches apart*. It is dropped in the drills by the hand, about 25 to 30 grains perhaps, in patches, but each patch a foot apart from each other in the row." By this means weeds and every thing else can be thoroughly eradicated." "The land is particularly clean, and the whole cultivation resembles a garden rather than a farm." as we usually see it. Except to praise the appearance of these "highly cultivated farms," Fortune does not say much of the produce,—he being so occupied with plant descriptions; but we take the well known reputation of Japan farms for extraordinary fertility, to lose nothing at least by the knowledge of their thin seeding system.

Selection of seed to produce *permanent* improved varieties, though more of a theory than a practice with our cultivators, has at any rate few objections made to its utility,—but thin seeding has many opponents, with various reasons. One that we have heard offered against it is that plants are so often drawn out of the ground in winter by freezing and thawing, that much more than is required is sown, in order to allow for losses on this score; but we take it that drawing out is owing rather to a want of horizontal roots, which thick sowing operates against. The clover, with its long straight root, is oftener drawn out than the humblest wheat plant. Thin seeding favors a free development of horizontal roots, and would guard against the losses which thick seeding is but at the best an expensive replacement.

What we have said of Japanese culture, might introduce another question, equally as important as thin seeding and selection, namely, whether it would not pay to sow Wheat wide enough to hoe and clean it in the first few weeks of spring,—but we leave the point here. Certainly, we think, we should hear the last about wheat turning to chess, under such a cleaning system.

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.

BAD SETTING GRAPE-VINES—*F. G. F., Lewistown, Pa.*—I enclose you herein a portion of the remains of a bunch of Muscat Grapes, grown in a Warm House. Will you do me the favor to inform me what is the cause of its bad condition? In the same house there are Hamburgs, Chasselas Musque, Royal Muscadine, and Barbarossa, none of which are affected,—excepting the R. Muscadine, which is slightly so; but on 2-5 year old vines of Muscat I have scarcely a bunch of grapes but what is similar to the enclosed. A month since these two vines promised bountifully, but at flowering they all commenced to decay, as per sample, and now I shall probably have half a dozen ugly looking bunches, when I should have had several dozen. Is it mildew? I notice some dark-brown spots on some of the leaves: very few, probably not a dozen, leaves are affected in this way in the whole house.

[This is a case of bad setting, usually arising from defective ventilation, by which the pollen or the stamens which bear it are imperfectly developed. A rather warmer and dryer atmosphere during the setting period is the best remedy.

Muscats are more liable to this complaint than others, through a natural tendency of that class to produce imperfect flowers; and the most perfect conditions of health are necessary to produce full bunches of them.]

A WISTARIA SINENSIS IN JAPAN.—Mr. Fortune, in his recent work on Japan, gives a somewhat wonderful account of a Glycine he says he saw:—"On our way (May 20th) we called at Nanka-nobu, to see a large specimen of Glycine sinensis, which was one of the lions in this part of the country. It was evidently of great age. It measured, at three feet from the ground, seven feet in circumference, and covered a space of trellis-work sixty feet by one hundred and two feet. The trellis was about eight feet in height, and many thousands of the long racemes of the Glycine hung down nearly half way to the ground. One of them, which I measured, was three feet six inches in length. The thousands of long, drooping, lilac racemes had a most extraordinary and beautiful appearance. People came from far and near to see the tree during the time it was in bloom; and, as it was in the garden of a public tea-house, it brought an extensive custom to the proprietor. Tables and benches were arranged under its shade, which, at the time of our visit, were well occupied with travellers and visitors."

Supposing our traveller's figures to be correct, a bunch,—thousands of them 3½ feet long, and (proportionately) 2½ feet wide,—larger than a bushel basket, must have been an astonishing sight, none the less including the Chinese,—like Lord Tomnoddy's page "tallest of boys or shortest of men,"—enjoying themselves in the balance of the 4½ feet space the enormous bunches left them.

BURNING OF LEAVES UNDER GLASS—*A Subscriber, New Jersey.*—If a grapery were built facing the south, in a lean-to form, and a greenhouse attached facing the north joined to it in a lean-to form, and the wall between each should be made of glass, instead of brick, so as the greenhouse plants could get some of the winter's sun, would the glass of the centre partition cause too much refraction to burn the plants in the greenhouse or conservatory? Please answer through the *Monthly*.

[We think the leaves would not be liable to burn under such circumstances.]

FINE EARLY PEA[illegible] handed about the middle of [illegible] Nectarines, ra[illegible] erside, Maryl[illegible] enterprise in [illegible] has erected [illegible] ready large[illegible] the extra earl[illegible]. The superior a[illegible] of Maryland as a fruit-growing State, have long been appreciated, and with a few energetic gentlemen like Mr. Wilkins as indicated by the present fine results, the fruit interests of the State will soon earn a distinguished reputation.

NURSERIES OF PRINCE & CO., FLUSHING, N. Y.—In our last appeared an advertisement, offering for sale these historic Nurseries. A few years ago, as our readers know, Mr. W. R. Prince resigned the business into the hands of his sons. On the breaking out of the war, the head of the new firm entered the service of his country, and by gallantry has risen to considerable distinction. The name of General Prince many will recognize in the newspaper reports in connection with many deeds of heroic daring. Now that the war has ended, he has been promoted to the regular army, and will remain in the service of his country, and the nur-

series must pass into other hands. The advantages of an old established place, with an old and honored name, and in a locality so classical in horticultural annals as Flushing is, are so rare, that the opportunity to an earnest capitalist and zealous energetic nurseryman is one very rarely indeed offered; and we should not be surprised to see some of our rising young nurserymen in country places move into the higher sphere offered.

We seldom yield to solicitations to notice advertisements in this department; but the sale of so veryold an establishment as this, connected so closely as it has been with the progress of American Horticulture, entitles it to exceptions to the rigid rules of trade.

Plum Knot—*Hortus, Cleveland, O.*—"Is there any thing decided known of the cause or cure for this trouble? I should be much obliged for information: I am nearly out of heart."

[It is a fungus excrescence, which propagates itself by very fine dust-like spores, entering the plant's system probably with the moisture absorbed by the roots. The spores do not mature until some exposure to the air after the excrescence forms; therefore if the tumors are cut out as soon as they appear and burned, so much of the evil does not come to perfection, [illegible]ld in considerable [illegible] soon as they [illegible]t the middle [illegible] the curculio

Early [illegible]—"Cherry [illegible]. "Is there such a thing as a Cherry which really ripens in May? I have been disappointed in May Duke, which with us is never ripe till June?"

[Our correspondent does not give his locality. We presume there are some localities where the May Duke is a real May fruit. Here in Philadelphia it is often ripe during the last days of May. Try Belle d'Orleans, which is a good cherry, and several days earlier; or Early Purple Guigne; the only two Cherries we know that are *really* ripe before May Duke.]

Grape-vines—*J. W., Detroit, Mich.*—Will you be kind enough to tell me what the eggs are that are found on the in-door and out-door Grape-vines early in spring? They are transparent, looking like small drops of water. I think them to be the eggs of the Thrip—are they? Is it advisable to leave on Cold Grapery vines more than one bunch on each lateral; and how many leaves beyond the bunch is it best to leave?

[The dots referred to are probably glandular excrescences, very common on vines when growing, especially when under glass. Practical gardeners usually like to see them as indicating great health and vigor.

If the vine is in full bearing condition, two bunches may be left to bear, and from two to three eyes beyond the bunch it is usual to stop back the bearing shoot.]

Name of a Magnolia—"*A Reader*," *Boston, Mass.*—There are many Magnolias of the Soulangeana and conspicua classes that have been raised from seeds, and distributed, and which vary from the normal forms. Probably yours is one of these. We do not know any named variety that is precisely as you describe yours to be.

Seymour's Patent Tree Protector.—We have had a sample of this invention placed on our table. It is designed to keep caterpillars and other insects that crawl up the trunks of trees, from getting farther than this apparatus; where they slide into a liquid prepared for them, and which is protected from being liquidated by rains.

Those who have found much use in this style of protection, will find this particular one ornamental and evidently well suited to the purpose.

Name of Maple—*J. B. J., Geneva, N. Y.*—Your specimen is *Acer Pseudo-platanus*, the Sycamore or Scarlet Maple.

Books, Catalogues, &c.

Woodward's Graperies and Horticultural Buildings. By Geo. E. & F. W. Woodward, New York. 1865.

The extraordinary increase in the taste for Horticulture amongst us during the past few years, is one of the marked phenomena of the present century, and is highly gratifying to all of us who have loved it and toiled for its advancement so long. Not as sheep are gathered into the sheepfold, with some love for them on the part of the shepherd; but with more love for the shearing that follows,—not for the material "cent. per cent." view which mere economists would take of it,—nor for the mere love inherent in all human breasts of seeing ones favorite pursuits honored and esteemed, do we rejoice at these things, but for the glory and good of the whole country.

Where Horticulture is popular, social intercourse and social enjoyments receive a charm unknown to other communities. Horticulturists, in every sense of the word, are the happiest people; and happy is that part of the world where they abound.

Nothing has proved the strong-rooted affection of our people for horticultural pursuits than the astonishing support given to the horticultural press during the terrible times but lately passed, when at least one-third of the agricultural press, many of them strong oaken giants in the forest of that species of literature, were torn up by the roots; but none of the purely horticultural papers gave way,—not that they were as willows, and would bow when oaks were too proud to bend; but that they were upheld by loving hands and arms through the four long years of battle, as firmly as they did the flag we love.

The increasing demand for works such as the one before us, ere the smoke of the bloody contest has scarcely passed away, shows still more the temper and tastes of the masses. More horticultural books have been published during the past year, and are being published now, than for the three years together before the war.

In the demand for Horticultural buildings is the popular taste increasingly apparent; and every article in the magazines bearing on the subject is eagerly read and studied by hundreds. This work of Messrs. Woodwards meets a pressing want, and is very welcome to us. It is a small work of less than 150 pages, and profusely illustrated by designs of many different styles of houses, and adapted to many different wants. Generally the manner in which the subjects are treated, and the reasonings on which the courses recommended are based, meet our judgment and approval; but from a few points which the authors defend we should have to differ. All of us have our hobby-horses, which we ride perhaps a little more than is good for the poor things; we at least, as we are occasionally conscious of, especially about New Year times, when we look back on our past and resolve to repent, do a little of this style of thing at times. There will, therefore, be some excuse for us when we say the Curvilinear style of houses seem to us a little in this line with our authors. We never could see that the additional cost brought equivalent advantages; or that the great beauty claimed for them was much superior to well-proportioned houses built with their roofs plane. This we mean as as a general rule; for in some cases they have advantages, and more indeed than our authors seem to claim for them; while, on the other hand, many good things claimed for them are more imaginary than real: as for instance, that because there is more feet of space on the line of an arc than the right line forming the segment of the arc, there is any thing gained by that additional space. It is the *direction* of space, and not its absolute measurement that gives value to the calculation; and hence, though a curvilinear roofed grapery might contain a fourth or fifth more cubic feet than one of the same length and breadth and heighth, built with a plane roof, no more grapes could be gathered from it. If we have a flat table three feet wide, and set pots on it, and get a stage of three shelves, one above another, one foot wide, and set pots on the shelves as on the table, it holds no more pots, although the space *on the angle* formed by the stage is greater, because the pots cannot sit perpendicular on an inclined plane,—horizontal space being precisely the same in both cases; so in a vinery, if we train a grape vine up a post, or straight up a back wall, we get little fruit from such canes; but the rule is well known to grape-growers, that the flatter the cane—that is, the more horizontal space it has—the heavier the crop of fruit.

But we do not wish [illegible]ical on so useful a book. We adv[illegible] profit by it.

Pines and Fi[illegible]
ray. Lond[illegible]

By the kin[illegible] us a copy of this [illegible] modern researches of [illegible] and John G. Veitch in Japan, have added largely to our knowledge of the Coniferæ of this region, and proves it to be one of the most interesting of the many peculiar tribes of Japanese vegetation.

The materials for this work are principally the collections of these gentlemen, and embrace only the "Pines and Firs," which, as we here understand things, includes Larches and Spruces also.

Of the five-leaved Pines, *Pinus Koræensis* of Siebold and Zuccarni, is described as a low-growing tree of from only 10 to 12 feet. From the description, it would probably bear a general resemblance to Pinus cembra. *Pinus parviflora* (S. and Z.), is a moderate-sized tree about 25 feet.

Of three-leaved Pines, *P. Bungeana* (Z.), is alone described, which is a tree of moderate size, having the branches with the bark peeling off, as in our Buttonwood trees, giving the trees a peculiar gray appearance. Another peculiarity of this

species is, that the branches, instead of the usual Pine spreading habit, "rush straight up to a great height." Some of the trees seen by Mr. Fortune were "probably over 200 years old."

Of the section having TWO LEAVES in a sheath, *Pinus Massoniana* (Lambert), is described as a common Japan species, extending over 2000 miles of country in China and Japan. It resembles *P. pinaster*, but the cones are but a little over one inch long instead of near six, as in that kind; but the size of the cones vary considerably. It is very popular with the Japanese. "Their art has exhausted itself in the culture of these Pines. They clip and cut them in all manner of ways, and grow them like fans and as espaliers, or even in the form of flat plates." There are many varieties in Japan, produced by long culture. The celebrated China ink is said to be made from the soot collected after burning the wood of this tree; and its rosin is used to make healing unguents and plasters.

In the same section is described *Pinus densiflora* (S. and Z.), which grows 40 feet high, but is very closely allied to, if indeed more than a variety of Pinus Massoniana.

The Spruces and Firs are treated of as if but one section; but it seems to us to serve a useful practical purpose to distinguish them as separate.

[redacted] Fir, not a Spruce [redacted] and "very dis- [redacted] as many small [redacted] m Fir,—inter- [redacted] *bilis* and *P.*

Nor [redacted]

Abies [redacted] a true Spruce, with a pendant cone near nine inches long. Mr. Fortune saw but one tree of it in Japan, and describes it as a magnificent species in every respect. Mr. Murray says "it is the Abies Jezoensis, of Lindley and later authors."

A species is described and named by Mr. Murray himself, as *Abies Fortunii*, which he seems to separate from A. Jezoensis, or rather shows it has been confounded with it. It is evidently a Fir (*Picea*), and of course very distinct from *Abies Jezoensis*, which is a true Spruce.

Abies firma (S. and Z.), seems to have been described under many names. It has the general habit of the Silver Fir.

Of the true Spruces is described *Abies Alcoquinana*, a tree of over 100 feet. The cone figured somewhat resembles our *Abies Douglassi*.

Abies microsperma (Lindley) is nearly allied to A. Alcoquinana.

Abies Jezoensis of Siebold and Zuccarina, is quite another thing from A. Jezoensis of Lindley; and as represented here, seems very much like our A. Menziesii.

Abies polita (S. and Z.) looks somewhat like our Norway Spruce; but it is allied structurally more with the Morinda Spruce.

Abies Tsuga (S. and Z.), is closely allied to our Norway Spruce. It is readily distinguished by a notch in the ends of each leaf, which the canadensis has not.

Abies leptolepsis (S. and Z.), is not a Spruce, but a Larch, with the general aspect of the European Larch, but easily distinguished by the reflexed scales of the cones.

Larix japonica is another of Mr. Murray's species. It is not, he says, Carriere's A. japonica, which is A. leptolepsis, but A. Kœmpferi of Lambert, who had no right to name it, as he has.

Abies Kœmpferi (Lindley), is a very different thing,—something "between a Cedar and a Larch," growing 100 feet.

Sciodapitys verticellata (S. and Z.). This singular plant has the foliage of a Yew, a cone somewhat like a Larch, and seed like a *Sequoia*. It is one of the most strikingly distinct of all the Japanese Coniferæ.

Cuninghamia sinensis, of Brown and Hooker, is the last one described, but this is pretty well known with us.

A painful feauture of all these English works on Coniferæ, is the discourteous way one has of writing of another, or of treating his opponents views of distinctive characters. Each also, as soon as he finds a branch different from some other, without waiting for perfect specimens, gives it some distinctive name; which name, as if distinctive names were very scarce, some other writer seizes on and gives to some very different plant; until the study of Coniferæ, as explained by English authors, becomes disgusting. In our younger days, as a punishment for Botanical faults, we were given over to study Solidagos. It is to be praised that they had no such task as modern Coniferæ to impose on us. The acrimony between these writers seems intense. Poor Gordon, who has real sins enough to answer for, in this book is roughly handled for calling a new genus "Pseudo-larix," or false Larch. It is "half Latin and half Greek, to begin with," says Murray; and then follows, "nature produces nothing false." One might suppose, "to begin with," that a word in common use by Cicero, Vitruvius, Pliny, and others, though originally from the Greek, was Latin enough to avoid Mr. Murray's objection; and in the "next place," Mr. Gordon has precedent enough in Pseudo-acacia, Pseudo-platanus, Pseudo-capsicum, and others, by the fathers in Botany, to take the edge off the criticism. It is a pity to have to note this petty wrangling among otherwise useful men.

New or Rare Plants.

BOUGAINVILLÆA SPECIOSA.—From J. Kirby Hedges, Esq., the Castle, Wallingford, accompanied by the following observations on the plant as a perpetual bloomer:

"The plant from which the accompanying blooms have been taken has been in flower here since March in last year. As I understand this is a very rare, if not an isolated instance of success, I beg to send the following particulars:—In April, 1861, Mr. Daniels kindly gave me a small plant, about eighteen inches high (a cutting from the celebrated one at Swyncombe), and explained his skillful and successful treatment, which my gardener endeavored to adopt. After two or three removes, the plant was turned out in May, 1862, in prepared soil, in a raised border at the back of the stove, where a flue, partly underground, imparts considerable bottom heat. The growth was very rapid. During the succeeding months of November, December, and January, it was kept perfectly dry, after which a rain-water tap just over the surface was allowed to run very gently for about twenty-four hours, till the soil was completely saturated. In March it showed blossom, which was encouraged by simply watering without stimulant, and by the end of the month its beautiful translucent bracts appeared in great profusion. From that time until about a fortnight ago, the plant has presented a crowded mass of inflorescence, extending over a space immediately under the glass of about eighteen feet by ten feet, which, during the winter months, was particularly gorgeous. Water was again withheld in November for three months, and then copiously given. The plant is now shifting its leaves, and the bloom is not so abundant, but the young shoots, and even the old wood where the bracts have fallen off, give promise of another splendid display. Matured growth and exposure to light (the house is a very light one), absolute rest, and abundant watering, appear to be the conditions necessary to secure perpetual flowering. Under this treatment the plant flowers here also freely in a pot."—*Gardener's Weekly.*

LYCIOPLESIUM PUBIFLORUM (Messrs. Veitch & Son).—A hardy solanaceous shrub, with something of the character of Lycium, and adapted for covering walls, on which its swollen tubular flowers of a peculiar shade of deep reddish-purple are produced freely in succession at the season of spring. It is deciduous, the young leaves being just pushing forth as the branches are developing their flowers. Messrs. Veitch state that it is perfectly hardy, having withstood the past three winters against a north wall without injury. The specimen shown was a branch cut from such a situation.—*Flor. Cabinet.*

WHITE DIELYTRA.—The beauty of the Dielytra spectabilis is now well known; and perhaps it is not too much to say in its favor, that no better hardy plant has come to us from the far East.—Hitherto, however, we have only been familiar with the pink variety—a variety, nevertheless, which, grown as a hardy perennial in the continental gardens, assumes almost a crimson hue. A white variety was, it appears, raised on the continent some two or three years since; and in the spring of last year this, or some similar form, appeared for the first time, under the name of *D. spectabilis alba*, but it was too weakly to judge of its true character. Now, Mr. Bull, by whom it was first introduced to this country, has [redacted] under cultivation, and we are gl[redacted] to be good ad[redacted] it belongs. T[redacted] certainly, tho[redacted] a little tin[redacted] really whit[redacted] pallid condition of [redacted] white enough to make the [redacted] useful for growing as a contrast. We may may get from it a purer white hereafter, but in the meantime this is well worth having. The stems are pale green, not tinted with red.—*Gardener's Chronicle.*

SCIADOPITY'S VERTICELLATA.—I long also to see what the Umbrella Pine of Japan will look like when it attains a good size; but, unless business should ever induce me to visit the far East, I shall be a very old man before I can do this. There is no doubt but that in its young state *Sciadopitys verticellata* is one of our most distinct and interesting conifers. It is said to attain a height of about 80 or 90 feet in its native land, and to have a perfectly pyramidal habit. Its long green leaves are arranged in whorls, and altogether it is very unlike any other tree we possess.—*Cor. Gard. Weekly.*

FORSYTHIA FORTUNI (Mr. Standish, Ascot).—This was a deciduous shrub, flowering before the development of the leaves. The flowers were yellow, and broad-petaled, as in F. suspensa, freely produced on the branches, and having a gay appearance. The leaves, so far as could be judged in their young partially developed condition, were broadly cordate-ovate, and coarsely serrated. It had been obtain by Mr. Fortune in the neighborhood of Pekin, and will be a very ornamental early-flowering shrub. —*Gardener's Weekly.*

Domestic Intelligence.

NATIVE GRAPES.—*Concluded from page* 182.

The analyses also prove that Dr. Gall's table for Oechsle's must scale can be safely used in finding the saccharine contents of native musts, the numbers obtained by analysis agreeing closely in most instances with the tabular amounts for corresponding densities.

To produce a wine that shall keep it is necessary that the must should contain at least 15 per cent. of sugar.

In Germany the must of the best grapes (Riesling) of the most favorable seasons contains 24–28 p[illegible] of s[illegible] of free acids; this [illegible] is regarded as [illegible]erior musts are [illegible]able as far as [illegible]gar.

[illegible] of partially ripene[illegible]s (total failures excepted) a wine [illegible] equal to the product of favorable [illegible], is due to Dr. Ludwig Gall, who has published a treatise on the subject, an abridged translation of which may be found in the Patent Office Report, Agriculture, 1860.

To be of value for the production of wine, available for vineyard culture, a vine should be hardy enough to endure severe winters with slight protection; healthy and vigorous, so as to be little subject to the attacks of mildew, for it is very well known that a vine which has lost most of its foliage from this or any other cause cannot ripen its fruit. Injury from frost is little to be feared if the fruit be well ripened before its advent; the clusters should hang on the vine as long as the weather permits, and the ripest (better if slightly shrivelled) removed in three or four successive gatherings; they should be picked on a dry day, and all defective berries removed. Many things influence early ripening, among which are soil, position, culture, variety and age of vine and crop adapted to its strength. The flavor of wine depends on the ripeness of the grapes and the proper proportion of free acids; this flavor is not present in the must, but is developed during fermentation and the after-preservation of the wine.

It might appear that undue preference had been given in these analyses to the "Rogers' Hybrids;" this is simply owing to the fact that these grapes, arising from the Union of the wild grape (*Vitis labrusca*) with the Black Hamburgh, and retaining some features of both, are more largely planted in this vicinity than other varieties, and are consequently more plenty in their season.

It has been asserted that these grapes are not true hybrids, but only seedlings of the "Mammoth Globe," and contain no foreign blood whatever. Such a conclusion is diametrically opposed to the horticultural experience of a century. For it is a well-known fact, that out of a large number, say five hundred chance seedlings of any fruit, but one or two at most will excel their parent; but these remarkable 'seedlings,' some forty in number, have not a bad grape among them, and are so far superior to the "Mammoth Globe" as to preclude all comparison. Their admixture of foreign blood is patent in the heavy clusters of fruit, so far pulpless as to yield 75–80 per cent. of juice, and the indigenous element recognizable in the health, hardiness and habit of the vine.

The chief value of analyses of grape-must lies in their repetition and comparison. The product of various seasons, climates and soils should be examined. If this is done we shall soon arrive at the grapes suitable for wine in different latitudes, and no doubt other important results. The parts of the country lying on an Isotherm of 70°–72° for the growing months, June, July, August. and September, wherever the summer rains are not excessive, are best adapted to wine growing; for a mean temperature of at least 65° for the above months is required for the ripening of even the earliest and hardiest varieties of grapes. The average temperature of Salem and vicinity, as deduced from observations extending over 45 years, is about 66.5°, and several degrees above this can be gained in well cultivated and protected gardens.

The above analyses are imperfect, several prominent grapes having been omitted, but I hope to extend and improve the collection at some future time.

COLOR OF FRUIT.—How far is it possible to discover and control the causes of *color?* Many cultivators of fruit have no doubt, observed that sickly trees, or those in a stunted and unhealthy condition, will generally produce fruit more highly colored than healthy and thrifty trees. The fruit will probably be smaller than on more vigorous trees, but will take on a much richer color. This may perhaps be attributed to the fact, that growing slowly, the juice of the fruit and the fabric of the skin may be more perfectly elaborated early in the season, and hence may be more thoroughly acted upon by the rays of the sun. It has been remarked by Prof. Balfour, a distinguished English botanist, that "the colors of flowers appear to depend upon the oxidation of their juices." The colors produced on the leaves of trees, in autumn, we are constantly told by vegetable physiologists, is due to the action of oxygen upon the juices and the texture of the foliage. We are also told, by the same authorities, that the sap of the trees carries up with it common air, carbonic acid and oxygen, as gases, in addition to the mineral elements which may be in solution in that fluid.—*Hovey's Magazine.*

I. S. SANBORN, of Gilmanton, N. H., lately caught 52 barrels of Maple sap in two days. His trees are on the side of a hill, and the sap is all carried in gutters to his reservoir and sap-house.

A NEW HEATING APPARATUS FOR A PROPAGATING BED.—During our brief visit to Washington, we stopped for a few minutes at the garden of the Agricultural Department, which is in charge of Wm. Saunders, Esq., one of the most accomplished of American horticulturists. Since our last visit here, a new propagating-house has been erected, combining advantages in the way of heating desired by Mr. Saunders, that are at once efficient and economical.

It is well known that the old mode of flue-heating has been in a great measure superseded by the hot water system. One great drawback against its more general introduction, is its expense. Boilers and pipes are costly, particularly so since the advance in the price of iron; frequently it costs more to procure and fit up the apparatus, than it does to build the houses; and, after all, there is a great waste of heat passing off at the chimney.

For producing what is technically known as *bottom heat* in a propagating-bed, there is no way of distributing warmth over a large surface so equally and economically as through water. The conducting power of water gives it the superiority in this respect, while it must be admitted that so far as economy of fuel is concerned, the old flue has the advantage. To combine the two modes, has long been considered a *desideratum*, and this seems to be done in a very effectual manner in the house alluded to. The house is about eighty feet in length, divided by partition across the middle. In one end is a propagating-bed, thirty-five feet by eight feet six inches, the other end is fitted up with staging for pots. The object being to heat the bed without heating the atmosphere further than will be provided by radiation from the surface of the bed, while the atmosphere of the other portion is heated by a flue.

The furnace is placed opposite the middle of the house, and has also some peculiarities of construction, which we did not have fully explained, but our attention was attracted to the simple mode of heating the water in the tank which underlies the bed. Within a few feet of the furnace, a small piece of bent four-inch pipe is inserted with two arms, one of which is the flow and the other the return. This pipe altogether is about fifteen feet in length, nine feet of which lies in the flue; and the heat, as it passes this pipe, is sufficient to maintain an average temperature of one hundred and ten degrees in the water, with moderate fire. If required, we und[illegible] it could be raised to one hundred [illegible] The shape of the [illegible]

bent portion being in the flue, which is represented by the horizontal lines. The simplicity and cheapness of this arrangement is manifest. Any plumber can make the boiler (for such it really is), and any laborer can fix it in its place. Its cost can always be readily ascertained, being little more than the cost of so many feet of three or four-inch pipe. It can also be extended, and several tanks heated from the same fire; a side tank forty feet by two feet is in this case warmed by a small piece of two-inch pipe, let down through the top of the same flue that contains the four-inch pipe above illustrated.—*Sorgo Journal.*

A LARGE ELM IN BYBERRY TOWNSHIP, BUCKS CO., PA.—The largest tree of any kind in the town-

ships was, without doubt, the "old Elm," which stood in Front of John Carver's house, and about one hundred yards distant. It was, on account of its great size, a curiosity, and sojourning strangers often went to view its gigantic form. It stood away from all surrounding trees, and was a noble specimen of that noble species now so seldom seen around our dwellings. It measured twenty-four feet in circumference, was forty feet up to its branches, and its topmost limbs were one hundred feet high. How long it had stood none could tell; but for several years previous to its destruction it had been gradually decaying. In the autumn of 1857 the "old Elm" took fire from some burning brush, and, being dry, it burned so rapidly that it fell the next day. The limbs burned for three days, and were finally extinguished by a shower of rain; but the roots burned for over one week. Mahlon Carver states that it made twenty-five cords of wood.—*Germantown Telegraph.*

A Wine Cellar. The Wine cellar is very important, as without a good cellar you cannot expect to keep your wine. It should be dry enough below the ground to keep an even temperature in summer and winter. It is generally made in the north side of a hill, and arched over: say twelve feet deep, so that the door is [illegible] ground, with abund- casks are laid [illegible] room to get [illegible] feet from the [illegible] must, pre- [illegible], not filling the [illegible] must ferments everything [illegible] others, preferring fermentation *above*, i.e. filling up the casks full, so that the skins, etc., which may yet be in the must, may be thrown out of the bung-hole by the fermentation. Both methods have their advantages, but I prefer the latter, with a very simple contrivance to exclude the air. This consists of a tin tube, built in the form of a double elbow, of which one ends fits tightly in the bung-hole, and the other into a dish of water, to be set on one end of the cask, through which the gas escapes.

The wine then remains in the cask until fermentation is over, when the bung is closed tightly, and it is left until perfectly clear, when it may be racked off into other casks. This should be done in February or January. Rack it off into good, clean casks, taking good care to thoroughly scour the casks in which the must has fermented, as the lees of the wine are very slimy, and must be carefully scrubbed off. A second fermentation will ensue in May or June, after which the wine should be racked again, and it is then fit to bottle or remain in the casks.—*Transactions of Ill. State Hort. Society.*

Cheap Trees.—Never buy trees because they are 'cheap,' The man who expects to purchase any thing without paying its full price, will commonly find himself mistaken, and there will always be some drawback. It will not be an economical expenditure to buy a hundred apple-trees at five dollars below the market price, and lose half of them because they have been badly grown, badly dug, and are poor, unsaleable sorts; nor more economical to get spurious or cheap sorts and lose fifty times their cost in subsequent years, by raising small or unsaleable crops; therefore always procure trees from reliable establishments.—*C. Gent.*

Propagating Hyacinths.—Hyacinth bulbs are imported from Holland, where large farms are devoted to their propagation. Our correspondent, F. Scholer, of Long Island, states that he can raise bulbs as good as the foreign ones, and nearly as cheaply as onions. Having some bulbs in which the heart, or central bud, had decayed, he planted them in autumn, and found in spring that numerous small bulbs were formed around each old one, in one case to the number of 34. These, when taken up in July, were found to be about the size of one's thumb; they were planted again in autumn, and the following summer, when they were lifted, were found to be equal in size and quality to imported ones. Acting on this hint, he afterwards removed the central bud from the bulbs by means of a knife, and succeeded in getting a crop of small bulbs. The experiment is easily tried, and we see no reason why, if sufficient pains be taken, good bulbs may not be as easily grown in our own gardens as abroad.—*American Agriculturist.*

Japan Cane.—The Department of Agriculture is in the receipt, from Japan, of a sample of sugar cane, somewhat resembling sorghum, for propagation and testing in this climate. It is cut in sections of three joints, one of which is planted in a hill, thus growing from layers instead of seed, and will not, therefore, hybridize with millets and consequently deteriorate.

Raising Trees on the Prairies.—A correspondent of the New York *Tribune* says:

"When it snows or blows on the prairies it is bitter cold. For miles there is no shelter. Barns are few, shelter for cattle fewer. Stables are made of straw. They want trees. Trees will grow well. In seven years, Dunlap, at Champaign, has raised a nice little forest of silver-leaf Maples. Many of of them are 25 feet high. Phœnix says if he were going to commence life again, he would plant Pines for saw-logs. Indeed, he has commenced a Pine forest of several acres. Let one look at Saml. Edwards' evergreens, and he will see how they grow. Mr. Galusha also is successful; so is every one who plants and properly cultivates. Walnut trees grow finely, as do most trees. Farmers should plant trees. If there were no other way, they should get up at midnight to do so.

Foreign Intelligence.

OBITUARY.

Death of Sir Joseph Paxton.—This distinguished English gardener died early in June, at 61 years of age. His name will long live in connection with English gardening; none the less by his genuine talents, than by the opportunities he has had for displaying them. He was without any particular early advantages, and was received as a workman in the Chiswick gardens when quite a young man. The report goes, that he was somewhat regardless of the rules of the garden, and on one occasion was dismissed; but, loitering about the grounds. was met by the Duke of Devonshire, President of the Horticultural Society, and told to ask the head of the establishment for a bouquet. Knowing the head (Dr. Lindley, we believe), to be absent, he made it "on his own responsibility," and without further explanation handed it to the Duke. A few days afterwards, the Duke applied to the secretary for a gardener, and suggested himself the one "who had displayed such excellent taste in the bouquet he had a few days ago," which was news to the secretary; and finding it was Paxton, "set his foot down" at once on so "worthless a character." The Duke persisted, however, and on the faith of the bouquet he was engaged, and became the great "Gardener of Chatsworth." The Duke was passionately fond of gardening, and Paxton displayed such genuine talent, that at length the Duke gave him free scope to "do as he pleased," and thus Chatsworth arose to its proud horticultural eminence. He became at length a sort of confidential companion to the Duke, who was unmarried, and considerably hard of hearing; and Paxton was the invariable travelling friend of the Duke wherever he went.

Paxton was a man of an extremely active temperament. Scope as there was at Chatsworth, by the continued and vast improvements, he still managed to get up a very popular "Magazine of Botany," in which were furnished colored plates of the best new flowers that appeared in English gardens, with a full history of them—popular and scientific. He also got out a "Botanical Dictionary," a work of much labor, and still popular with gardeners. In this he gave the Botanical and English names of all the plants of interest to British gardeners, with some short descriptions by which they might be identified. In addition to these labors in Horticulture, he took a very great interest in the development of the English system of Railroads. He originated a great many companies, and was 'Chairman' or President of some of the most successful ones. But his fame is principally connected with the great Crystal Palace of Hyde Park. The conception of this magnificent scheme is due to Mr. John Jay Smith, of Germantown, a representative of the Penn family in the United States, who, in correspondence with another representative of the family in England, Lord Granville, proposed its accomplishment. That gentleman did not think it feasible unless Prince Albert could be induced to head the movement: which, as is well known, he subsequently agreed [illegible] it was decided on, the questio[illegible] pose, threatene[illegible] Plans had bee[illegible] architects in F[illegible] evidently ou[illegible]

Paxton, a[illegible] with a [illegible] the great Victoria Lily, and su[illegible], as the plant was then growing and flowering profusely. The leaves of the Victoria are of immense strength, so much so that a child of 100 pounds weight can be sustained on a leaf as readily as on a boat; and studying the "how and the why" of this great power, Paxton discovered that it was owing to a peculiar and beautiful natural arrangement of 'trussing' of the veins, which had not been in use before in architectural designs; and he immediately set to work to design a building in accordance with his new born ideas. The result was magical. The whole world rang with the genius of Paxton, and it would be difficult now to decide which attracted the most attention, the 'Palace' itself, or the fair conducted under it.

His reward did not end with his renown; but his sovereign showed the national appreciation of his services by titling him "Sir Joseph,"—an honor which many Englishmen would toil on bread and

water to the full limit of three-score and ten years, if they could wear it one hour before they died.

Sir Joseph had recently been elected a member of the British Parliament; but was not, we believe, in that position at the time of his death.

The career of this great gardener is a striking example that real merit does not go unrewarded. Too many gardeners believe that it is opportunity alone leads to the greatness of their fellows: that it is "no use to learn,"—"the greatest fools get into the best places as easily as the rest," and in similar sentiments; but the talented and observing man will see opportunities where the many will not; and though an inferior man may, by superior assurance at times, get a good position; if he does not fail absolutely, he seldom goes further, and soon "goes out of mind."

Paxton, by his example and success, has been one of the best friends the working gardener ever had, elevating him and his profession to a point never before attained, and is entitled to the honor of a Saint in the Horticultural Calendar, and to be held in "everlasting remembrance."

Horticultural Exhibition.—The challenge given by the Royal Horticultural Society to the gardens of the sovereigns of Europe for a competitive exhibition of vegetables, has [redacted]rance, Russia, Belgium, etc., [redacted]aily received.—

[redacted]—Paris is now in all its beauty. Early spring is especially the season of the year when visitors ought to arrive. The Champs Elysées are fresh and green, the Bois is really enjoyable, and the millions of flowering shrubs which adorn the squares and public gardens are now in full blossom, and give an air of *fete* to the city, which the heat and dust of the summer months completely destroys. But with strange perversity the great mass of our English visitors arrive in July and August. This fact has given rise to the saying that in summer "il n'y a que les chiens enragés et les Anglais a Paris,"—the association of idea between mad-dogs and our countrymen not being flattering to our national vanity. Nevertheless the saying, which has become a proverb, is true. You all wait till dust covers every tree and plant, till the stifling heat of a blazing sun renders every movement an exertion, till every individual of any importance has either left Paris for their *chateaux* or for the *bains de mer*, till, instead of the brilliant equipages which throng the Champs Elysées and the Bois, we have a string of *remises* occupied by strangers armed with 'Bradshaws' and 'Murrays,' and till even the very shops are *organises* for the English,—that is, filled with rubbish which their proprietors have failed in selling during the season.

To give you an idea of the present loveliness of the Parc Monceaux—which park, you are aware, was originally the plaisaunce of the Regent Duke of Orleans and the scene of the *fete*, where the fair La Parbère flirted and the profligate DeBerry gambled, and has been the private property of the Orleans family till the town of Paris forced the present Queen Dowager Marie Amélie to sell it for the benefit of the inhabitants. I merely state that 180,000 plants of Fuchsias, Pelargoniums, Cinerarias, Roses, etc., are being planted out at this moment, which number does not include the masses of Yuccas, Rhododendrons, Azalias, and other flowering shrubs. During the winter months twelve gardeners are kept in constant work, which number is increased to seventeen after the first of May. The whole expense of keeping the park in order amounts to near two millions—that is, between eighty and ninety thousand pounds—a year. The magic bridge has been repaired, where the beauties of the Regent's court were once caught in their brocaded satins and laces by a sudden deluge from the water works from the balustrade, and several ruins of the temples and colonnades of the last century, now overgrown with mosses and ivy, have a very good effect beneath the magnificent old trees of the gardens. By the way, I cannot help remarking on the the masses of pink color produced by the blossoms of the *Orme Judee*, which attains the height of a Horse-chestnut, and, contrasted with the white flowers of that tree, has an admirable effect.—*English Paper.*

Blanching Celery.—Seeing lately in your Journal some remarks on different modes of blanching Celery, I am reminded of a plan I saw in Oxfordshire, in August last. It was simply placing a common drain-pipe upright, and allowing the plant to grow up through it. My friend, in whose garden I saw it, assured me that he not only had his Celery blanched much better, but also that it was ready for the table much earlier. That the latter is the case I can affirm from my own observation; for the plants I saw growing in the pipes had already grown above the tops of the pipes, while those treated in the ordinary way were not half so high.—*Cottage Gardener.*

The Ivies of Europe, Africa, and Asia.—
[*Concluded from page* 190.]

The African Ivy is Hedera canariensis, Willd. It is found in the Canary Islands, Madeira, and the north of Africa, and may at once be known by its uppermost leaves being cordate, its umbels arranged in panicles, rarely and only in young plants in simple racemes, and its pedicels and calyx being covered with white stellate hairs, the hairs having from 13 to 15 rays. To this must probably be referred what is called in gardens Scotch or Irish Ivy. It is a much quicker-growing plant than H. helix, and on that account more frequently planted in gardens, but is much more susceptible to cold, and in Germany often killed by frost. At some time or other this species is said to have been introduced into Ireland, and has hence received the name of H. hibernica in our gardens: but I have not been able to learn any thing authentic about this introduction, or whether it has been introduced at all. At present, Dr. Moore, of Glasnevin, informs me it is found, to all intents and purposes, wild in various parts of Ireland, growing together with H. helix, and far away from cultivation. Mackay also mentions it as having been found in Ireland. I have not been able to examine any specimens of wild Irish Ivy, and our British Floras do not afford any information respecting it.

The Asiatic Ivy is Hedera colchica, C. Koch. It is not found out of Asia, and may be known by its uppermost leaves being elliptical or lanceolate, its umbels arranged in simple racemes, and its pedicels and calyx being covered with yellowish two-lobed scales, the lobes being opposite each other, and divided into seven to ten segments. Hedera colchica is now an inmate of our gardens, it having been found on the Caucasian coast of the Black Sea, by Mr. Rœgner, formerly the curator of the Botanic Gardens of Odessa. Thus it found its way into our gardens, occurring here and there under the (I believe unpublished) name of Rœgneriana. The only two popular accounts of this plant are given by Wallich and C. Koch. In Nepal it is called Sagooke or Gooke, (*i. e.* the climber), and is, says Wallich, "one of the most common, as well as the most noble productions of Nepal, where it grows to a majestic size, and extends over trees and rocks." In Trans-Caucasian, on the contrary, it is more stunted than the European Ivy, having reached its western geographical limit; and, says C. Koch, "I have never seen it ascend the tops of the numerous Beeches of that country, whilst the common Ivy climbed to to the highest branches." Though there are several important peculiarities to distinguish the three species, the most ready way to make sure of them is to look at the character furnished by the hairs and scales. They are largest in H. helix, where they may be seen distinctly with a common pocket lens; but in the other two species it requires a greater magnifying power to make their nature quite intelligible.—*Dr. Seeman, in Journal of Botany.*

Origin of Forget-me-not.—"The royal adventurer, Henry of Lancaster—the banished and aspiring Lancaster—appears to have been the person who gave the *Myosotis arvensis*, or Forget-me-not, its emblematical and poetical meaning, by writing it, at the period of his exile, on his collar of S. S., with the initial letter of his *mot*, or watch-word, *Souveigne vous de moy*—thus rendering it the symbol of remembrance, and, like the subsequent fatal roses of York, and Lancaster, and Stuart, the Lily of Bourbon, and the Violet of Napoleon, an historical flower. Few of those who, at parting, exchange this simple, touching appeal to memory, are aware of the fact that it was first used as such by a royal Plantagenet prince, who was, perhaps, indebted to the agency of this mystic blossom for the crown of England. It was with his hostess, at that time wife of the Duke of Bretagne, that Henry exchanged this token of goodwill and remembrance.'

Sexual Cu[redacted] member how [redacted] of nature" [redacted] ago, when [redacted] ton, and oth[redacted] of the str[redacted] one of the [redacted] by Mr. Meehan, at that time as changing its sexual character,—the Weeping Willow,—[redacted] enter largely into the interest of a paper published by the chief Botanical Society in the world,—the Linnæan Society of London. In a recent issue, Dr. S. J. A. Salter says, in reference to a sexual Monstrosity consisting in the development of Polleniferous Ovules in two species of Passiflora:

"The monstrosities consisted in a partial and persistent separation of the carpels, and thus opening the cavity of the ovary; in the development of anther-like bodies along the free edges of the separated carpels; and in the conversion of certain of the ovules themselves into sacs of pollen, these ovules being for the most part malformed, but in a few cases perfect, excepting the presence of the pollen.

"It was remarked that monstrosities of a some-

what similar kind had been found in a few instances in other plants, but that there was no recorded example in which the ovules had become polleniferous.

"The monstrosities already recorded were these: the pistil had been observed converted into anthers or stamens in Euphorbia palustris, Gentiana campestris, and Salix babylonica; a supernumerary stamen had been found occupying the place of a wanting carpel in Impatiens; the placentas had been seen metamorphosed into stamens in Hyacinthus orientalis, one half of the fruit enclosing seeds, the other half anthers; anther-cells had been found on the inner walls of the ovary in Primula acaulis; the pistils had been seen surmounted by organs resembling anthers in Campanula persicifolia and ranunculoides; half the ovary had been known to be converted into a staminal mass in Cheiranthus Cheiri; part of the styles had been changed into anthiferous filaments in Cholchicum autumnale; pistils had been converted, some wholly, some partially, into antheral organs in Zea Mays; and an antheral mass full of pollen and divided by a septum had been found in otherwise normal carpels of Chamærops humilis. The authorities for these statements were respectively Rœper, Agardh, Schimper, Gay, Moquin-Tandon, and Mohl.

"The author also quoted a curious observation of Prof. Braun's on the Weeping Willow, to [illegible] appear to have [illegible]nt, and to have [illegible] plant was a female [illegible]hus produced [illegible] The Weeping Willow [illegible] St. Helena, was, in its original state a [illegible], yet many cuttings have been brought to England which have produced plants more or less male. A similar instance has also occurred in Germany. In the garden of the Grand-Ducal Palace at Schwetzingen, is a Weeping Willow, which, although from the very same origin as all the rest, has in a great degree changed its sex, so that it not only shows the most manifold transitional grades of female into male flowers, but also bears on many twigs purely male catkins.

"In the Passion-flower referred to, in this paper, the form of the polleniferous bodies was very diverse: principally, however, that of a bilobed anther; or of pedicellate globular and oval bodies attached to the placenta within the ovarian cavity, sometimes below the free split edges of the carpels; or of ovules modified only by the presence of a very few pollen grains in their substance."

Crown of Thorns.—So far is it from being impossible to weave the Paliurus aculeatus into a wreath, that the prettiest head-dress we ever saw was made of this plant, when just perfecting its fruit, and on this account we recommend it to the special notice of the manufacturers of artificial flowers. It may, however, be remarked that Gleditschia triacantha is now commonly known in Italy by the name of Spina Christi, though of American origin, partly on account of its stiff thorns, partly because the compound thorns present something like the appearance of a cross. Our correspondent, therefore, when he speaks of the thorns of Paliurus being so large and strong, which is by no means their character, perhaps had the Gleditschia in his eye, being deceived possibly by its popular name. It would indeed be difficult to twine that, though it would be easy enough to make a crown of Paliurus. —*Gardener's Chronicle.*

The Ornamental Varieties of the Beech.—The European and American Beech are so nearly alike, that some botanists have considered them the same species. There is a slight difference in the shape of the buds and leaves, but they so much resemble one another in form and habit, that for the purposes of planting as shade trees they may be considered as identical. We have often wondered why the Beech was so much neglected in tree planting. It may not have the grace of some other trees, but for affording a perfect shade, no tree is equal to it. Another thing which commends it is its cleanliness and general freedom from the attacks of insects; and besides, its foliage remains in autumn much later than that of other deciduous trees. Many of our readers will recollect some particular Beech tree, whose cool shade was a favorite retreat in their boyhood, and where, enjoying the shelter that it afforded, they whiled away the sultry hours of a summer's afternoon in carving some favorite name upon the bark, which offers a tempting surface to the knife. The European Beech has made several accidental sports, which have been propagated by grafting, and are now very generally distributed. One of the oldest of these is the Purple Beech, the original tree of which was discovered in Germany in the last century. The young leaves are of a cherry-red, but as they grow older, they become darker, and eventually are of so deep a purple as to give the tree, among the French, the name of Black Beech. The Purple Beech in spring is a very attractive object; the young leaves, when agitated by the wind during bright sunshine, make such a brilliant show as to give the tree the appearance of being on fire. The seeds of the Purple Beech have produced many colored varieties; the best known of these is the Copper Beech, which has lighter colored foliage than its parent. Both these sorts are desirable in a collection of ornamental trees.

Another and very interesting variety of the Beech is the cut-leaved or the fern-leaved, in which the foliage is variously divided, and in some forms even shredded. This is a most graceful foliage, and the tree is worthy of being planted much more frequently than it is. If we could have but six ornamental trees, the fern-leaved beech would be among the first we should choose.

Many forest trees have produced seedlings, the branches of which have a drooping or pendulous form; these are commonly called 'weeping' trees, and we have weeping varieties of the Elm, Ash, Birch, Beech, and many other trees. None of these weeping trees are more beautiful than a well grown Weeping Beech. The original tree was found in the grounds of an English park, and it has been propagated by grafting, and is now not very rare in America, though not nearly as well known as it should be. Always attractive, it is toward sunset that this tree shows its beauty most strikingly; then the pendulous branches throw deep shadows, and the whole tree is a picture of light and shade worthy of the study of an artist. For small places, and for situations near the house, no tree presents more desirable qualities than the Weeping Beech. —*Gardener's Weekly.*

Arrangement of Color in Flower-gardens.—Mr. Crace, at the Society of Arts, concerning the colors employed in the International Exhibition, says what is applicable to every other decorative purpose:—"Avoid blazing contrasts of color, such as bright red next bright green, or bright blue next bright yellow. Such contrasts are not harmonious. Let one of the two colors always be subservient to the other. It is not so much what color a material is, but how that color is made to appear. It is necessary to bear in mind that all colors have their complimentaries, which add to or detract from the beauties of the adjoing colors, according to what they may be. Thus the complementary of red is green, of blue is orange, of yellow is violet. If you cut out pieces of grey paper in an ornamental form, and stick a piece on each of the three colors I have named, you will find in a shaded light the grey will be fully tinted by the complementaries of these colors; but you cannot lay down precise rules. An experienced artist can bring any two colors together by properly modulating them. The hand of Nature never errs. Whether it brings together scarlet and crimson, as in the Cactus; scarlet and purple, as in the Fuchsia; yellow and orange, as in the Calceolaria; or the colors in the varied plumage of exotic birds—the harmony is always beautiful, ever perfect. I will suggest a few contrasts:—Black and warm brown, violet and pale green, violet and light rose color, deep blue and golden brown, chocolate and bright blue, deep red and grey, maroon and warm green, deep blue and pink, chocolate and pea green, maroon and deep blue, claret and buff."

Imperial Tokay.—Tokay wine is much esteemed by the wine drinkers, but as its high price excludes it from general use, the following notice from the *Moniteur Vinicole* may not be uninteresting:—

"The village of Tokay, which gives its name to the wine, is situated in Hungary, on the top of a hill near the meeting of the Rodrog with the Theiss. The vineyards are to the west of Rodrog, and they occupy a space of ten square miles. The earth is of yellow chalk mixed with large pebbles. The wine is white, and the vintage is commenced as late in the year as possible, but generally at the end of October. There are four different kinds of Tokay. The fi[illegible]ing the grapes, when cleared o[illegible] with a double [illegible] the grapes re[illegible] vat is filled wi[illegible] After a few h[illegible] Fah., and [illegible]tion destroys the [illegible] and the weight of the grapes forces the juice through the holes in the bottom. The grapes are then trodden under foot, and the wine is poured into small casks, where it remains exposed to the air for a month after having fermented for two days. This is the wine which is generally exported. When of a good quality, it has a silvery, oily color, the taste sweet and mellow, with a peculiar earthy flavor, slightly astringent and aromatic, with good body. This wine may be preserved for an almost indefinite period, but is not drinkable until it is three years old. The ordinary price of Tokay wine, of first quality, purchased at the vineyard, is from 5*s.* to 6*s.* the bottle. The Emperor of Russia keeps a commission agent at Tokay, who purchases 40 or 50 casks of the wine every year. Some vine-growers in the Arriege cultivate vineyards on the tops of the highest mountains in calcareous earth covered with stones similar to those found in the vineyards near Tokay,

but they have not as yet succeeded in producing any thing as good as the Hungarian wine."

PRESERVING FLOWERS BY GLYCERINE.—Mr. C. R. Tichborne states, in the London *Artizan*, that, being desirous of preserving a vegetable *Lusus naturæ* for some time, he submerged it in some weak glycerine, considering that that fluid would be less likely to destroy the tender organism, and also remembering that it had been found most efficient in the preservation of animal tissues. The glycerine answered its purpose most admirably, preserving the delicate parts of the plant and preventing decomposition. He immediately saw that the property of glycerine might be made available for certain pharmaceutical purposes, where it was desired to preserve or extract the aroma of vegetable products, such as elder, orange, or rose-flowers, and also might be substituted for the oils and fats used in the purest process termed enfleurage. The glycerine need not be especially pure, but should be devoid of odor. The elder-flowers should be gathered when the corolla is fully expanded, but not too far gone; they should then be plucked from the stem, and packed firmly in wide-mouthed bottles or jars, without crushing them; and the whole should then be covered with glycerine. Mr. Tichborne stat[redacted]served flowers [redacted], procured a [redacted]led the most [redacted] of the aroma [redacted]ment of glycerine [redacted] enfleurage, in which [redacted].

GRAFTING CACTI.—The [redacted] Epiphyllums here are of the same kind as one sees everywhere; they are grafted on the Continent, and cannot endure so low a temperature as those grafted in England, because the continentals use a rather tender but free stock, whereas the English propagators use Pereskia for a stock, and the trees so formed will thrive in any well-kept greenhouse. These continental specimens are handsome plants, and flower superbly, but when in flower it is scarcely safe to place them in the drawing-room or conservatory, on account of the tender nature of the stock, whereas, when grafted on Pereskias, you may do almost any thing with them short of exposing them to frost or fire, and no harm results. *Gard. Chronicle.*

ECHEVERIA METALLICA.—An excellent plant for amateurs, when in a fine state, and makes a delightful variation with its huge flesh queer-colored leaves and very dignified habit.—*Gardener's Chronicle.*

Horticultural Notices.

PENN'A. HORTICULTURAL SOCIETY.

MONTHLY DISPLAY & BUSINESS MEETING, APR. 18.

Best Table Design, Basket of Cut Flowers, Parlor Flower-stand, Hand Bouquets, 12 Plants in 8-inch pots, all to D. McQueen, gardener to J. Longstreth. The plants were: Rhyncospermum jasminoides, Maranta zebrina, Canna major, Azalea Roderick Dhu, Begonia punctata, B. Lapeyrousi.

"The Table design was a very handsome and novel arrangement, but, in our opinion a little too stiff; the arrangement of the flowers was in most excellent taste, and only required some small drooping flowers to make it perfect.

"The Basket of Cut Flowers was also most tastefully arranged.

"The Parlor Flower-stand exhibitor displayed his usual good taste, not only in the arrangement of the plants and flowers of which it was composed, but in the rustic stand in which they were arranged; and hope he may be encouraged to make further efforts in the same direction.

"The collection of 12 Plants, together with Ferns, Lycopodiums, Marantas and Dracœnas, are particularly worthy of notice, and reflect great credit upon the grower,—the Marantas and Dracœnas being splendid specimens."

The best 12 plants in 10-inch pots, Hanging Basket, 6 Ferns: Asplenium nidus, Gymnogramma chrysophylla, Dicksonia antarctica, Pteris argyrea, Davallea elegans, Adiantum cuneatum; 6 Marantas: regalis, zebrina, Porteana, bicolor, Warcewiczii; Dracœnas: indivisa, nobilis, maculata, terminalis, and ferrœa, to E. Hibbert, gardener to Prof. Rogers.

Best 6 Pansies to Thomas Meehan.

A special premium to D. McQueen, for a noble specimen of the beautiful Rhyncospermum jasminoides; and to Thos. Meehan, for two Ferns, exhibited for the first time before the society: Polypodium cambricum, and Scolopendrium cristatum; also to E. Hibbert, for a of collection plants.

A special premium was awarded to D. Robertson, gardener to M. Baird, Esq., for a splendid collection of plants—too late staged to compete under the rules—but being a new contributor, and not supposed to know the rules well, the committee honored their merit in this especial way; they were Pandanus variegata, P. odorata, Aspidistra lurida variegata, Caladium Chantini, C. bicolor, Pavetta Bourbonica, Maranta micans, Fuchsia Rose of Castile, F. Venus de Medici, Caladium Houletti, Solanum purpureum, Ananassa variegata.

"We also desire to call attention to the new plants, exhibited for the first time, and for which we award a special premium, viz.: Dracœna marginata, Croton cascarilla varia, Brexia chrysophylla, from W. Sutherland, gard. to B. Bullock.

"Your committee beg leave to call the attention of the society to the imperfect manner in which collections of plants are often-times numbered and arranged, and would suggest that exhibitors be more particular, thereby saving both trouble and annoyance; also that more attention be paid to having plants properly labeled, and placed on the tables before the time allowed by the schedule."

Vegetables:—Special premiums to G. Huster, gardener to A. Cummings, Esq., and D. McCallum, gardener to H. Duhring, for 6 very fine heads of Drumhead Lettuce.

MONTHLY DISPLAY & BUSINESS MEETING, MAY 16.

Best Table Design, Hand Bouquet, and Specimen Pelargonium, to D. McQueen.

Hanging Basket, Collection of Foliage-plants and 12 Plants in not over 10-inch pots, to E. Hibbert. The Foliage-plants were: —Adiantum cuneatum, Croton pictum, Asplenium nidus, Tradescantia lineata, T. discolor, Yucca variegata, Pteris argyrea, Begonia sanguinea, Maranta sanguinea, Thyrsacanthus rutilans, Pandanus javanicus, Tillandsia rosea, Maranta Porteana, M. regalis, M. capitata, Dracœna terminalis, Campylobotrys refulgens, C. cyrophylla.

Collection of 6 Plants not over 8-inch pots, to D. Robertson. They were Diffenbackia seguina picta, Dracœna ferrœa, Cissus discolor, Caladiu Chantini, C. Houlettii, C. bicolor splendens.

Best Collection of Indigenous Plants, to Thomas Meehan, comprising 38 species.

To the same was awarded best Collection of Cut specimens of hardy Flowering Shrubs.

Special premiums to E. R. Hibbert, for Sedum carneum flabellifolium, exhibited for the first time, and to W. Bailey, gardener to President King, for a noble specimen of Farfugium grande, and one of Coleus atropurpureum; to Mackenzie & Son, for three new varieties of Abutilons; to D. Robertson, for Table Design; to E. R. Hibbert, for Collection of Plants; to John Pollock, for a splendid specimen of Cypripedium barbatum and venustum; and the committee gave honorable notice to some fine plants by W. Sutherland.

The Committee on Fruits awarded a special premium to John Ellis, gardener at Fox Meadow, for a bunch of Black Hamburgh Grapes, weighing 3 pounds and beautifully ripened; and to Mackenzie & Son, for 12 pots of their new Strawberry, Triumph of Holland, a desirable variety for pot culture.

The Vegetable Committee awarded the best Rhubarb to C. Harmer, Esq.; best 24 Asparagus, —enormous stalks, probably the largest ever exhibited,—to T. Meghran gard. to Owen Jones.

SPECIAL DISPLAY OF ROSES AND STRAWBERRIES, JUNE 6TH.

This was the grand meeting of the season. The room was crowded, and the great profusion of Roses and Strawberries, was the theme of much praise from the crowd of members present. The great success which has attended the whole exhibitions of the Society this year must be particularly gratifying to the working members of the society, and pleasing and instructive to the many new members, of whom we believe there have been nearly *one hundred* added to the Society during the past six months.

ROSES.

The best 50 Hybrid Perpetuals, 25 varieties, was gained by Geo. Simpson; but, unfortunately, no list of them appears on the record, we therefore append the list of [redacted] gained by H. A. Dreer:—M[redacted] of Sutherland, [redacted] Elliott, Queen [redacted] fant du Mont [redacted] baceres, Com[redacted] tailles, D[redacted] aron Prevost, [redacted] Laffay, Wm. Griffith, Jacques Laffite, [redacted] Bocella, Pius IX., Anna de Driesbach, [redacted], Marquis d'Ailsa.

Best 25 Ro[redacted] of 12 kinds, to H. A. Dreer. They were Madam [redacted], Auguste Mie, LaReine, Duchess de Cambaceres, Comtesse de Chabrilliant, Lion des Combats, Baron Prevost, Lord Raglan, William Griffith Jacques Lafitte, Pius IX., Anna de Driesbach.

Second best to Thomas Meehan.

Best 12 of any other class, 6 each, to Thomas Meehan. They were Agrippine, Salet Moss, Mad. Bosanquet, George Peabody, Capt. Ingraham (Moss), W. Lobb (Moss), Lady Warrender.

Second best to D. McQueen.

Best general collection, 60 vars., to H. Graham.

Second best to R. Buist.

Special premiums to Mackenzie & Son, George Simpson, D. McQueen, E. Satterthwait, for various collections of Roses; for a very handsome de-

sign to H. A. Dreer; also D. McQueen; Collection of Gloxinias to R. Buist, named Apollo, Couleur de Baker, Luige Gallino, Rubra, Carl Enke, Lady Grosvenor, Lion de Fremanville, Madame Pauline, Marquis de St. Innocent, Rrincess of Prussia, Victor Lemoine, Violette, Mad. Guke de Harrison.

STRAWBERRIES.

To the Strawberry show we can hardly expect to do justice. To judge by the varieties oftenest produced, the most popular kinds were Triomphe de Gand, Albany, Downer's Prolific, Russell's Prolific, French's Seedling and Fillmore.

The best collection of named varieties, 34 kinds, was awarded to William Parry. Among them we noticed as very fine, Russell, Hovey, Buffalo (very distinct from Russell), Monitor, Col. Ellsworth, La Constante, and Scarlet Magnate.

Best 12 varieties to A. L. Felten. These were Princess Alice Maud, Austin, Fillmore, Lennig's or Abbott's White, French's Seedling, Hovey, Albany, Downer, May Queen, Diadem, Hautbois, Germantown, Lady Finger, Triomphe de Gand, Comptesse d'Arraca, Trollope's Victoria, McAvoy's Superior.

Best collection of 12, 1 pint each, to E. Satterthwait.

Best 6, to J. McGowen, Esq.: Victoria, Russell, Triomphe [illegible], Lennig's White, Lady [illegible]

[illegible] Chas. Winfield, [illegible] The Vicomtesse [illegible] was very much [illegible]

"The premium for the best new variety was awarded to the *Great Eastern*, shown by J. Churchman, of Burlington, N. J. Fruit large and pointed; color crimson; flesh dark red, juicy, with a rich sub-acid flavor. It is said to grow in large stools, and to form but few runners.

A special premium was awarded to the *Union*, an immense, round berry; color light crimson; flesh pink, sub-acid, but not high flavored,—the most showy fruit on exhibition, the berries measuring 5 inches around; grown and exhibited by Charles Harmer, Esq.

The other new sorts shown were

The *Agriculturist*, but the fruit being from very young vines, the committee did not deem it just to pass an opinion on its merits. Shown by Thomas Meehan and J. S. Collins.

Green Prolific, shown by Samuel L. Allen. Berry large and round; light scarlet; flesh pink, but not high flavored,—similar to Trollope's Victoria in in appearance.

A seedling, from D. Nelson. Berry very large and coxcomb-shaped; color scarlet; flesh pink and hollow at the center; flavor a sprightly sub-acid—similar to Austin Seedling, both in appearance and flavor.

For the best quart of *Buffalo Seedling*, to Mr. N. Leeds. This variety is a large, glossy, and most beautiful fruit, bright scarlet and slightly necked; flesh juicy, of a rich claret color, with crimson centre; flavor neither sweet nor acid, but combining both,—said to be a moderate bearer.

For the best quart of *Albany Seedling*, to Thos. Meehan.

For the best quart of *Hovey's Seedling*, to Chas. Harmer. These were very large and well grown.

For the best quart of *French's Seedling*, to J. S. Collins.

For the best quart of *Russell's Prolific*, N. Leeds.

For the best quart of *Triomphe de Gand*, to J. V. Merrick. The competition for this sort was very close (many competing), and probably so many well-grown specimens were never shown at one time before.

For the best quart of *Lady Finger*, to N. Leeds. A large and beautiful collection of this excellent variety were shown.

Your committee recommend the following as worthy of especial commendation, being remarkably large and well grown, and nearly as fine as those which took the premium:—One quart of *Abington Blush*, a very high-flavored and delicious fruit, grown by G. M. Kohl, of Abington, Pa.; one quart of *Russell's Prolific*, shown by S. Allen; one quart of *Triomphe de Gand*, very superior, grown by Chas. Harmer; one quart each of *Triomphe de Gand* and *Albany Seedling*, grown by D. W. Herstine; one quart of *Lennig's White*, very large and delicious, grown by John McGowan.

Your committee also call attention to a very neat and complete fruit-box, made of veneers, with tuck, so as to be put together or taken apart very quickly, called the "Burlington Free Fruit-box," made by J. Churchman, Burlington, N. J.

All of which is respectfully submitted,
J. E. Mitchell, W. L. Schaffer, C. P. Hayes,
E. Satterthwait, S. W. Noble, *Committee.*"

On the whole the show was so very exciting to the Pomological devotee, that at its conclusion we took the train for Pittsburgh, while the fever was on us, to see whether they could produce in the Western part of the State any thing near equal to us of the Eastern, and our impressions we will endeavor to give in our next number.

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

THOMAS MEEHAN, Editor.
W. G. P. BRINCKLOE, Publisher.
AUGUST, 1865. VOL. VII.---NO. 8.

Hints for August.

FLOWER-GARDEN AND PLEASURE-GROUND.

There is little to offer in the way of hints for this department this month. In some extra dry parts of the grounds, some young trees may suffer from drought, and must be watered,—not on the surface, but as advised in former numbers, by making a basin around the trunk of the tree by drawing back the soil, putting in a good quantity of water, and an hour or so afterwards, when the water has thoroughly soaked away, draw the soil forming the basin back loosely over the place as before.

Seed saving is quite an art. Many annuals and perennials are worthy of attention. The earliest flowers produce the best seed; and it should be dried in the shade before cleaning out and putting away.

Hollies, and many evergreens are successfully planted in August,—not when brought from a distance, as the chance of drying on the way is great, but from a few miles in the neighborhood. Prune back a few inches of the shoots at transplanting. Keep soil from baking, if you would keep it from drying fast. You do this by first hoeing, and then rolling to crush the clods; or, if that cannot be done, raking fine by a rake.

Layers of growing shoots may yet be made, cutting the slit on the upper side, as security against snapping off. Carnations are particularly to be layered. In our climate it is best to layer them so as to get young ones every second year.

Japan, and other Lilies, as they decay after flowering, should be transplanted at once. They may be set in nearly the same places, if a little fresh soil be put in.

Almost all spring flowers, as Daises, Polyanthus, Auriculas, and so on, lie dormant most of the summer, and commence to grow about September. They should be repotted as soon as they show signs of new growth.

FRUIT GARDEN.

As soon as the fruit has been perfected on the Raspberry, the canes that have bore should be at once cut out. Some kinds throw up suckers very freely, and by this means rob one another, and cause a very poor crop to be produced the next season. No time should be lost in thinning out the weaker ones, and only enough canes left that will be required to produce a crop the next season. The Raspberry ought [illegible] in the summer that no pruning will be required in the spring but to shorten the ends of the canes. In rare [illegible] where it is of more importance to get up a [illegible] of young plants, than to get a crop of fruit, this advice will not of course apply.

Blackberries will, in the main, require very much the same treatment as the raspberry. They are also very liable to sucker up more than is desirable, and much attention will be required to keep them within due bounds. Neither of these two kinds of fruit should be planted near a lawn, as the roots, if they once get into the grass, are very difficult of eradication, and as troublesome as the vilest weeds.

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. Sometimes 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 waterings 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.

Strawberries are best grown in beds about four feet wide, for the convenience in gathering the fruit, and giving them the best of cultivation. About three rows in a bed, and the plants twelve inches apart in the row, will be a good arrangement.

The Grape-vine at this season will require attention, to see that the leaves are all retained healthy till thoroughly ripened. It is not a sign of healthiness for a vine to grow late; on the contrary, such late growth generally gets killed in the winter,—but the leaves should all stay on, to insure the greatest health of the vine, until the frost comes, when they should all be so mature as to fall together. Frequent heavy syringings are amongst the best ways to keep off insects from out-door grapes, and so protect the foliage from their ravages.

Many kinds of fruit trees that have arrived at a bearing age, may perhaps be growing very vigorously and producing very little or no fruit. Those who have read our remarks in past numbers will understand that whatever checks the wood-producing principle, tends to throw the plant into a bearing state. For this purpose, summer pruning is often employed, which, by checking the most vigorous shoots, weakens the whole plant, and throws it into a fruitful condition. The same result is obtained by root-pruning, with this difference, that by the last operation the whole of the branches are proportionately checked, while by pinching only the strong-growing shoots—the weak ones gain at the expense of the stronger ones. Presuming that the branches have been brought into a satisfactory condition in this respect, root-pruning may now this month be resorted to. We cannot say exactly how far from the trunk the roots may be operated on, so much depends on the age and vigor of the tree. In a luxuriant, healthy tree, one-fourth may be safely dispensed with. In a four year old standard Pear tree, for instance, the roots will perhaps have reached four feet from the trunk on every side. A circle six feet in diameter may then be cut around the stem, extending two feet beneath the surface. It is not necessary to dig out the soil to accomplish the result; a post spade, or strong spade of any kind, may be driven down vigorously, describing the circle, and doing the work very effectually. Of all trees, the Peach is as much benefited by root-pruning as any.

VEGETABLE GARDEN.

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 an 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, always claiming the earliest and best to ensure a perfect stock.

Celery will require earthing up as it grows, to get it to blanch well. It is not well, however, to commence too early, as earthing up tends, in a slight degree, to weaken the growth of the plants. Take care, also, not to let the soil get into the heart in earthing, or the crown is apt to rot.

As fast as endive is desired for salad, it should be blanched. Matting thrown over is the best for this purpose, as the plants are not so liable to rot as when pots or boards are employed.

In cold or mountainous regions, melons are hastened in the ripening process, and improved in flavor, by a piece of tile being placed under the fruit.

Keep weeds from your compost heaps, as they exhaust the soil, and bear seed for future brow-sweatings.

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.

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.

Cut down straggling herbs, and they will make new heads for next season.

Towards the end of the month, a sowing of Spinach may be made in rich soil, which will come in for use before winter. That desired for winter and early spring use, is usually sown in September in this region. A few Turnips may also be sown for an early crop, but will be hot and stringy unless the soil is very rich.

Corn salad is often sowed at the end of this month. It does not do well in damp soil or low situation.

HOT AND GREENHOUSE.

Many kinds of greenhouse plants, as Oranges, Lemons, Camellias, etc., may be inarched or budded at this season. The process of inarching is simple, and consists merely in bringing the shoots of two different plants together. The bark is very lightly shaved for half an inch or more on each shoot, which are then both tied together, and in about two months the union may be examined, and if found sufficiently strong, the scion may be separated, and suffered to go for better or for worse with the stock you have selected for its helpmate through life.

Preparations must now be made with a view to stocking the houses for the next winter and spring's use. Geraniums of all kinds may now be readily struck. A frame in a shady place, set on some light sandy soil in the open air, affords one of the best places possible for striking all kinds of half-ripened wood. A partial shade is at all times best for cuttings at the start, though the sooner they can be made to accustom themselves safely to the full light, the better they usually do.

Seed of many things may also be sown for winter and spring blooming, particularly Cineraria, Calceolaria, Pansy, Daisy, Chinese Primrose, and some of the annuals. Great care is necessary with the Calceolaria: the seed is so small, that it rebels at the smallest covering of soil. The best way is to sow it on the surface, water well, and then cover with a pane of glass until fairly germinated; this will prevent evaporation and consequent drying of the seed. Almost all kinds of seeds germinate most readily in partial shade; but as soon as possible after germination, they should be inured to as much light as they will bear.

Many plants, as Begonias, Gloxinias, etc., can be raised from leaves. Cut the leaf off down to near its junction with the parent stem; insert it down to near the blade of the leaf in pots of well-drained light sandy soil; peg the blade of the leaf down on the surface of the soil, and set the pot in a shady place,—if with a little bottom heat all the better.

Communications.

BIRDS AND INSECTS.

BY H. WHITE, QUEBEC, CANADA.

For several years past the Districts of Quebec and Montreal have suffered severely from the ravages of Caterpillars (*Pieris rapæ* and *Abraxis ribearia*, chiefly), and cabbages and currant bushes have alike been stripped of every leaf, in a series of gardens.

Now this astonishing increase of late years in the number of destructive insects in the above districts was by many believed be owing to the wanton destruction of the various kinds of small birds frequenting the above localities; and to check this destruction and Act for the Protection of Insectivorous and other Birds was passed by the Canadian Legislature, in 1864. But a writer in the *Canada Farmer* has started a theory in connection with this subject which is new to many.

It is alleged that the scarcity of small birds "is entirely attributable to our common black crow, (a point upon which Mr. J. P. Norris, or some other of your numerous contributors, may be able to throw some light). The writer goes on to assert that the habits of the common Crow of ths country are identical with those of the Hooded (*Corvus cornix*) and Carrion (*Corvus carone*) Crows of Great Britain, whose destructive powers are so well known, and against which constant war is waged by all gamekeepers and s portsmen.

Now to this allegation I wish to demur, on the ground that, as a Scotch jury would say, the charge is *not proven*.

The Hooded or Royston Crow (*Corvus cornix*), has doubtless, earned for itself a somewhat unenviable character. Mr. Chas. St. John says*:—"It preys on young grouse, partridges, hares, etc., and is very destructive to eggs of all sorts. In certain feeding spots in the woods, I have seen the remains of eggs of the most extraordinary variety and number. No sooner does a wild duck, pheasant, or any kind of bird leave its nest, than the Hooded Crow is on the look out; and I have no doubt that a single pair often destroys many hundred eggs in the course of a season."

The Carrion Crow (*C. carone*), of Europe, is also a great scamp; and when he is nailed to a barn door, *pour encourager les autres*, why there is very little doubt but that he richly deserves it. But I am not disposed so summarily to convict the com-

* Natural History and Sport in Moray.

mon Crow of this country of crimes which have been proven against his distant connections.

Of the American Crow* (*C. Americanus*), the Editor of the New York edition (1853) of "Wilson's Ornithology," says:—"It seems a species more intermediate between the common Rook (*C. frugilegus*), and C. Carone; their gregarious habits and *feeding so much on grain*, are quite at variance with the characteristics of the common Crow." And again:—"It is in the month of May, and until the middle of June, that the Crow is most destructive to the corn-fields." Further on he adds: "The myriads of worms, moles, mice, caterpillars, grubs, and beetles, which he has destroyed, are altogether overlooked on these occasions."

Now I have rather a leaning towards our glossy-coated friend. In these Northern latitudes, where the Meadow-lark is a stranger, and the Blue-bird is unknown, the Crow is the harbinger of spring, and his arrival is welcomed as the precursor of genial weather—the herald of the merry sunshine. Under these circumstances, to raise a hue and cry against him, upon a mere rumor, would evidence the basest ingratitude. We cannot do less than give him fair-play.

POLANISIA PURPUREA.

BY R. O. THOMPSON, NURSERY HILL, NEBRASKA.

I herewith send you pressed flower of *Polanisia purpurea*, a tall-growing annual from the Rocky Mountains. When in full bloom it presents an attractive appearance, and remains in bloom a long time. The worth of the plant is not alone in admiring it, for it has proved here, the past very dry season, a most splendid honey-bee plant. While all else was withering and drying up, this was covered with bloom, and the bees worked it throughout the day. The honey made from it is a very pure white, of high flavor. I have about ten thousand plants now up, and shall save a large quantity of seed. I would like to place a few of the seed in the hands of every subscriber of the *Gardener's Monthly*, gratis, if they will pay postage (four cts.), this fall. It should be sown in the fall to get an early bloom.

[This is much prettier than the common *Cleomes*, and allied plants already in cultivation in our gardens, and as a plant for Bee-raisers, will be valuable. Very early bee flowers are yet a desideratum. In the regular season there is nothing better than Red or White Clover, and little else is wanted, as that is abundant generally everywhere. As a very early April flower, *Pachysandra procumbens* is a great favorite with the Honey-bee. Some plants in our nursery are covered with bees on every warm day.—ED.]

* Audubon names this Crow Corvus Americanus, holding it to be a different species from C. carone, the name given by Wilson, who considered it to be identical with the Carrion Crow of Europe.

EVERGREENS AND HEDGES.

Read before Pa. Horticultural Society, Mar. 7,65.'

BY THOMAS MEEHAN, GERMANTOWN.

Evergreens and hedges is a very broad subject, and a very suggestive theme. I can do no more than invite your attention to a few of the most interesting matters connected with the question; and direct your thoughts toward a few points which it will be more proper for you to discuss than for me to fully enlarge on.

It is usual with lecturers, at the beginning of their discourse, to "start fair," as they say, that all may be clear as they go along. They would expect me first to take up the inquiry, "What are Evergreens?" Your intelligence will not allow me to enter on this course; but I may be permitted to describe some of the principal divisions and classes of Evergreens.

Strictly speaking there are no Evergreens,—or, to put the point from the opposite view, if there are Evergreens, all plants are evergreen. The difference is simply that some plants retain their leaves for four months, others six, some twelve, and a few two years, or occasionally a little more. The Horse-chestnut will retain its leaves in our climate but little more than four months, while the Southern Water-oak (*Quercus aquatica*), in Pennsylvania, is green till near Christmas. The leaves of the Mahonia and Holly are evergreen for about thirteen months, the White Pine for about fifteen, the Norway Spruce for about three years, and the Auracaria or Chili Pine for a number, perhaps ten or more. An evergreen then means simply a tree that in every month of the year has green leaves on it. As a new set of foliage appears every twelve months, those which retain their leaves green thirteen, will be what we call evergreens.

The chief divisions of evergreen trees are into broad-leaved evergreens, and the coniferæ.

The broad-leaved evergreens are such as the *Euonymus japonica*, *Rhododendron*, *Kalmia*, *Mahonia*, and so on, which require for their full development a moist climate, which we have not. The coniferæ takes its name from the conical fruits or cones of the Pine tribe, and not from the shape of the trees, as many suppose, for their outlines are often other than conical. But all the coniferæ have conical fruit; not only Pines, but Arborvitæs, Yews, Cypresses, Junipers, and others like them: all with a turpentiny or resinous sap, are in the coniferous tribe.

The broad-leaved evergreen always seemed to me to be the better half, the fair lady of the vegetable creation. Her taste—the taste of woman for adorning herself—is ably matched by the glorious foliage of the broad-leaved evergreen tree; and woman's beauty and accomplishments, the sweetness and purity of her nature, and the chaste and refining influences she casts around about her, are very nearly rivalled by the gorgeous touchings of the Rhododendron, or typified in the delicious sweetness of the Cape Jessamine, the Myrtle, or the Bay. They have also woman's nature over again. By themselves, apart from the fostering care of something stronger than they—alone in the cold windy world, where the vigorous man-like deciduous tree cannot shelter and protect them from the rude hand of winter, or the cold touch of severe frost, they seem to sicken and pine away, and never have that singular beauty and effectiveness as when growing in the shady groves and cosy sheltered spots nature designed for their peaceful homes and lives. Occasionally we find a strange specimen of a broad-leaved evergreen, like a strong-minded woman, that seems to delight in standing out alone and paddling over the sea of life as it were, by herself in her own canoe; but I have always noticed that should some commiserating gardener, in spite of such odd perversity, remove the wayward plant to more favorable quarters—marry it, so to say, to a nice rich shady spot beneath the strong arms and umbrageous protection of some deciduous tree, it never seemed to want to go back to its lonely state again.

In the evergreen Ivy particularly is the beauty of feminine dependance illustrated. It towers and twines itself around the loftiest ambition or creeps over the lowliest heart. What the poet says to the Ivy we may say as truly of woman—to either as to the one:

> "High from the fields of air look down
> Those eyries of a vanished race,
> Where harp, and battle, and renown,
> Have passed and left no trace:
> But thou art there serenely bright,
> Meeting the mountain storms with bloom,
> Thou that will climb the loftiest height,
> Or crown the lowliest tomb!
> Ivy! Ivy! all are thine,
> Palace, hearth, and shrine.'

The ancients seem to have been struck by the comparison in reference to the Ivy, as I have been to the whole race of broad-leaved evergreens; for in Greece the altar of Hymen was always surrounded with Ivy during the marriage service; and a sprig of Ivy was presented to every newly-married pair, to signify that *he* should support her as the oak, and *she* cling to him until forced by ruthless death or violence to part. Beautiful indeed is the Ivy emblem in this case. Not even the death of the tree can force the tender and loving Ivy from it. It still clings to its memory long after life has left the trunk, and while a particle of the ideal form remains.

I have said broad-leaved evergreens are not well-adapted to severe dry climates, or dry exposed places. Such a large mass of foliage is favorable to heavy evaporation,—is a source of loss of heat.

When we say that an evergreen is not entirely hardy—that it has been killed by the winter—it amounts to nearly the same as if we were to say it has been unable to maintain its heat.

The Rhododendron is a beautiful natural thermometer. When the temperature is above the freezing point, the leaves are perfectly flat and plane; with about five degrees of frost, the leaves reflex a little; when the thermometer is about ten or fifteen there is a curl to the leaves, and when zero is about reached, they hang flaccid by the stems, and as completely twisted as a Grecian curl. This curling and twisting seems like the struggles of a thing of animal organization; for let the glass once get so low as to put out the fire of life in the plant, and the leaves immediately expand as if there were no frost—more beautiful indeed than in their living state; just as we see in our own dead a singular beauty spread over the features for an hour or so after the death-struggle is over, and the spirit is flown never to return again.

Although not strictly within the subject, I may here observe that this wonderful subject of heat in plants has not received the attention of vegetable physiologists that its importance merits. There is room for many discoveries that I have no doubt would have a very important bearing on skillful horticulture. Almost the whole of what we know of vegetable physiology is derived from English works. We have had few observers in our country, and with such a very different climate, many new facts would certainly be observed that would modify conclusions founded on imperfect data. For one instance: It is laid down as a rule by Lindley, that the root-fibres of plants are growing all winter, and absorbing moisture continually, "except when encased in

frost." Now, I except to this exception. I have satisfied myself that roots absorb moisture even when entirely and absolutely encased in frost. I have seen a Grape-vine forced, when the plant was under glass, and the stem and roots outside; when there were eighteen inches of frost in that vine border, and all, or very nearly all of those roots encased in that eighteen inches of frost. I have seen this vine grow and do well. Your Maple trees also, which you well know store sap up continually throughout the winter until in February, the slightest scratch will make the liquid flow down their trunks in streams; will do this just as well in ground penetrated the deepest by frost, as where the greatest protection to the roots is given. But the most singular point is in reference to Hyacinths, Snowdrops, Crocuses, and other Dutch bulbs. We may plant them four or six inches deep in December, and the frost may occur immediately—the following day if you like—deep enough to thoroughly encase the bulbs in rock-like firmness; and this frost may continue, without an hour's intermission, in all its solidity, till the first warm thaw in March, yet we shall find that the bulb has pushed its way through the frozen earth entirely to the surface; and is ready to open its blossoms before the thaw has scarcely had time to penetrate an inch of the frozen soil beneath.

I am not able to explain to you how vegetation is able to do this; but to hazard a guess, I may suppose that the natural heat of the vegetable substance, which it is one of the main objects of life to supply as it wastes away, is given off just sufficiently to keep the very closest earth in compact with it thawed; and so, in effect, we may say the plant thaws its own way through the frozen soil as it grows.

Although rather a bye question, this one of natural heat, it has a bearing on the proper time to transplant evergreens. English works, acting on the principle before referred to, that roots grow all winter when not actually encased in frost, infer that therefore the fall is the best time to transplant evergreens, because the roots have all the winter to store up moisture ready for spring operations. But, although this practice is found to work well in England's climate, it has proved the opposite here; and the reason is plain, on the theory already advanced. The moist climate of England is not favorable to great evaporation, hence the mutilated roots, though limited in their capacity to supply food to maintain the heat lost by evaporation, can still do it successfully: while with us evaporation is so rapid, that the plant which would live and do well there, though transplanted in precisely the same way and time, would here very soon dry up. But it is found in practice that if we transplant very early in fall, so as to give the roots abundant time to develop themselves freely before the trying time of winter comes, they will do very well indeed.

This in fact is the whole secret of successful transplanting of evergreens, namely, to plant them at a time when the roots will push freely at once, and when there is not much evaporation likely to go on until the roots do push. This rule, you see, will vary with the climate. Where the winters are very mild, and there will not be much evaporation going on, transplanting can be proceeded with all through the season; but in such climates as this of ours, the two most favorable seasons will be October and May.

Another subject connected with evergreens is pruning. There may be a great beauty in what we call a natural look to a tree, which pruning will often destroy. There is a beauty in the natural growth of a tree which no art can wholly make up. That pruning which spoils this natural beauty I would strongly oppose; but there is a system of pruning which favors nature, and brings out a development of beauty which is rather the perfection of natural form than a violation of it.

The true beauty of an evergreen lies in a vigorous, luxurious growth, and yet not such a vigorous pushing out as consists of only a few strong branches here and there; but a thick and full growth, strong and bushy—*fat*, as we might say—not a huge mammoth skeleton, remarkable only for its large bones, but well filled with firm flesh of a healthy hue. How to get this thick and full set growth, and yet not interfere with the tree's vigor, is the real aim and object of evergreen pruning.

It is an easy matter to train a young evergreen into a handsome tree. It is simply by pinching out the points of the young growth after it has started in the spring. They push out, as you know points like the ends of gas burners, usually in May and June. The sooner one can pinch the better; as soon as they are say one and a half inches long will do, then pinch off about half an inch. Another bud will form for a leader near where the point is pinched out, and the most prying eye will not be able to note in a year or two's time that the tree had lost its leading bud; and in addition many new buds will be formed, which will make next year the bushy shoots that are to fill up naked limbs with thick foliage.

The chief thing to be remembered in this operation is, that you may never pinch out strong side buds, unless the bud of the main central shoot is pinched out at the same time. The effect of pinching strong shoots is to weaken them, and make weaker unpinched shoots strong. As the central shoot is always the strongest, if that be not pinched it will only grow stronger, and instead of our adding vigor to the side shoots, they grow weaker as the central one pushes strongly away.

Almost all who fail in getting good results from pruning evergreens, do so from forgetting this simple rule. To repeat it again, never trim or stop the side shoots unless the main or leading shoot is cut or pinched back at the same time.

But supposing we have a tree already of considerable size, that has been somewhat neglected, and is not at all the beautiful thick full-branched tree we would like it to be. The problem is how to bring it to the condition desired. Still by cutting its head out—no matter how low down—to within a few inches of where some likely shoot strikes out, which is to be tied up to the stump to form a leader, and the stump, after a year or so, cut clean away, so that the bark can soon grow over and heal the wound. The side branches can have the principal onces cut away, and treated in the same way; or simply by cutting out the centre points of all the branching shoots.

There are a few evergreens that are either new or not well known, but yet are so very desirable that it may serve a useful purpose to name them here.

Among the Fir tribe, the Siberian Silver Fir (*Picea pichta*) is very hardy and very beautiful: it is truly an evergreen—a bright, shining, glossy evergreen; for many, as you know, have a rather fuscous tinge in winter time. Among Spruces the Menzies' Spruce (*Abies Menziesii*) is a magnificent thing: the silvery under-surface of the leaves is freely exhibited, through the habit of the shoots being somewhat erect; and in contrast with the green upper surface, presents an appearance that always interests the commonest beholder. The Douglass Spruce (*Abies Douglassii*) is another admirable plant. In summer, when the growth is not fully mature, the plant at a little distance seems enveloped in a strange mistiness, which gives it a sort of fairy elegance none other has. Of the dwarfer trees *Cupressus Lawsoniana* and *Thujopsis borealis*, are admirable evergreens, and among those of still dwarfer growth, the *Thuja ericoides*, the best of the hardy dwarf evergreens ever introduced.

I have left myself little space to speak of hedges. Taking all things into account, the American Arborvitæ is the best evergreen hedge plant. No matter how old it is, it has always a tendency to keep furnished with foliage to the ground, which is essential to a good hedge plant; and as it grows slow, and conically, it can be kept in trim with little care or cost. The Hemlock Spruce is more graceful than the Arborvitæ, but being naturally a tree, with a tendency to lose its lower branches, if in the slightest shade, it takes more science, skill, and labor to keep it in order. The Norway Spruce makes an admirable protective evergreen hedge, if allowed to have about four feet of a base, and trained to a truncate form; as, indeed, all evergreen hedges should be. The Siberian Arborvitæ makes a very beautiful dwarf hedge, where a border or mere division is desired rather than a full screen.

When asked to address you on *Evergreens and Hedges*, I suppose evergreen hedges were simply meant: I will therefore close by observing that the Holly, White Cedar, and Red Cedar, have also been used for hedge purposes, but have not achieved, from various causes, the popularity of those abovenamed.

FORWARDING EARLY VEGETABLES.

BY G. T., CINCINNATI, OHIO.

I wish to give you a little of my experience in using small pieces of turf sod for forwarding vegetables. I have used it very extensively this spring, and find it of great advantage. I take pieces about four or five inches square, in March, and put them in my earliest Cucumber frame, and drop three or four seeds of Cucumbers or melons in each piece; and then, as I cut Lettuce, during April, out of other frames, I plant them in it. Again, in March, I filled two sashes with early Potatoes, in the same way; in April I planted them out in the ground, and filled the sashes again with Lima Beans, and put them out in the second week in May. Two sashes will hold enough beans to plant 150 hills. It gives beans generally two weeks earlier, and you do not have to replant, as none of them rot with the wet, which is a great consideration. A great many gardeners around here have had to plant three times this spring. I forward Okra the same way. For Potatoes and Lima Beans, I take strips 4 or 5 inches in width, and any length convenient, put them in the frame close together, grass downwards, cut a notch down the centre and put the beans 3 together, then a space of 2 or 3 inches, then three more, then cover all over with some loose rich soil. Potatoes I put about 3 inches apart; when I wish to plant I take them out in lengths and put them

in a wheelbarrow; take them to the ground and cut them in pieces with a sharp spade.

I notice one of your subscribers wishes to know how to propagate the *Aloysia citriodora*. I give my experience for what it is worth: Plant them out in the spring, take them up in the fall and pot them; keep them in the cellar all winter, and propagate the same as grape-vines, in sand. Every joint will make a plant. Since I adopted that plan I have quit striking from young wood, as it is surer with less trouble.

Pear-growing has received a great check this spring. It is discouraging to look at the trees: some killed entirely, some half killed, and some with a few of the young shoots cut. Very few trees have escaped entirely uninjured. It may safely be put down as a fact, that Pear growing will not pay around Cincinnati.

[It would be interesting to know whether the Pear trees referred to had the leaf blight during summer,—in which case, the wood being unripe, is easily killed in winter.

As leaf blight is always more severe in highly cultivated ground than elsewhere, there may be a chance with a change in the system for a more profitable return.—Ed.]

RHODODENDRONS IN ENGLAND.

BY H. H. HUNNEWELL, ESQ., OF BOSTON, MASS.

London, 30th May, 1865.

Although my last letter to you was so recent, I cannot resist writing you a few lines to tell you that I have seen Waterer's grand Rhododendron Exhibition, under the great tent in the Horticultural Garden, and that it is the most gorgeous sight imaginable, far exceeding my most sanguine expectations. Picture to yourself 3000 plants, the finest that could be selected out of a plantation of fifty acres, all arranged with reference to their size, so as to present one mass of flowers and foliage, the different varieties distributed so as to show off the colors to the greatest possible advantage, and you may get some idea of the Great Show. In the centre, standing alone, were several of his old standard plants, 25 years old, with heads of perfect shape, covered with thousands and thousands of blossoms, 8 and 10 feet high. Of course no ordinary plantation could possibly comparewith these, as there will always be some ill-shaped specimens, and some that do not blossom; but of course here every plant was perfect of itself, with every variety of color, and all his new ones about being brought out. Among them was the famous "H. W. Sargent," which is certainly a beauty. Waterer says it is one of the very finest he has cultivated, and that it will be sought after for a thousand years. He attaches more importance to the foliage than I had expected, considers that the first requisite, and will not cultivate a plant without it, no matter how handsome the flower is. The tent of course gives a sort of subdued light, the effect of which, as you enter, is truly wonderful. I found Waterer there, and though staying in London during the exhibition, urged me to go down to Woking with him the next day, where, of course, I had another great treat. It is a great establishment, 130 acres, and a great curiosity: the whole laid out in squares, many of not more than half an acre, enclosed in high hedges twelve feet high, of Yews, Beeches, Thorns, Arborvitæs, etc., so all the plants are very much sheltered, and never experience a breath of wind. He has an immense collection of large Golden Yews (*Taxus elegantissima*); for one of the former in front of his own cottage he has refused 50 guineas! He goes in strongly for the *Cupressus Lawsoniana*, and he has two new varieties to come out one of these days: one called *densa*, and a silver-leafed, very pretty,—and lots of other novelties, waiting for a quantity before offered. Some of his Golden Yews are trimmed up in pyramidal shape, as tall as an Irish Yew! There are some large specimens of the Douglass Firs, the finest trees in his grounds —lots of those dwarf Spruces in the borders all over the place; some famous specimens of the Weeping Beech, also the Purple. The Chinese Juniper makes a very ornamental tree when of size. Abies Kempferi is very handsome, but is still very rare and dear,—can't get seeds or strike it.

[We are indebted to a kind friend for the above letter from Mr. Hunnewell, which will be read with much interest by all our readers.—Ed.]

FRUIT NEAR ST. LOUIS, MO.

BY J. M. JORDAN.

The Strawberry crop was small, affected by late frost.

Cherries are very fine, and it does our eyes good to see the fine Black Tartarian, Yellow Spanish, and especially the Dukes.

Pears promise well.

Grapes already gladden our hearts. The Concord, which are planted by the hundred thousand, bids fair to reward our labor, and redeem themselves.

All small fruits are doing finely: Currants are in abundance, and the famous Red Dutch is taking the lead of every other variety in this locality.

Apples are looking finely. Plums, Apricots, and Nectarines are yet free from the curculio, and are doing well.

A NEW GRAPE-VINE ENEMY.

(*Myochrous villosulus variety.*)

BY J. STAUFFER, LANCASTER, PA.

Mr. Newett, gardener to H. Pratt McKean, Esq., handed us some insects that commit heavy depredations on the vines in their graperies, and which, seeming to us to be new, we sent, as usual in these cases, to our friend, Mr. Stauffer, who very kindly furnishes us the following account; and we have had the annexed engraving made of the little pest, so our readers may at once be on terms of "a better acquaintance" at once on their first introduction:

"Yours of the 29th ult., together with the box containing a number of small, villous, beetles of a foxy color, which you inform me are destructive to the grape,—stripping the vine of its foliage. You also refer to its habit of dropping to the ground when disturbed, and remaining motionless some time, like the "Plum Weevil."

At the first glance I was under the impression that it was the same insect sent to me July 15th, 1861, by Mr. Wm. Saunders, Editor of the *Farmer and Gardener*, (then). He also stated, that "they were as cunning as a fox, playing possum while looking at them, and go down so suddenly that it requires dexterity to nab them." This insect, on analysis, proved to be *Tidia villosulus*,—or *Myochrus villosulus* of Melscheimer. I have it figured in all its parts. Those of yours are rather larger, more densely villous on the elytra, body and legs,—yet, if not identically the same, they are simply a variety.

I might spin you out a long yarn on kindred species, for this family contains 71 genera, and each genus many species, according to authors, who however, with synonyms and imperfect descriptions, I fear have greatly multiplied these mischievous insects,—in their books I mean, not in fact. Besides, it is really difficult to group them, they are so diversified and interchangeably similar and dissimilar, that each writer who has undertaken to fix limits to the groups has failed: there being some included, agreeing quite as well with another group from which they are excluded. This makes the study of them (classically) very perplexing.

However, they are mischievous scamps, and require seeing to, call them what name you will,—*Phyllophaga*, or, as Westwood says is more correct, *Phytophaga*, that means LEAF EATER, and that they do; divide them as you may into groups of *crioceris*, *chrysomela*, *cassida*, etc., their habits are one and the same, as a general rule, often causing great injury to the crops of the farmer and horticulturist. By defoliating the vines the grapes will not ripen, and vintage becomes abortive.

It is somewhat remarkable that neither Harris nor Fitch mentions this species; Say has among his Cryptocephalus(13 species) some now included in the genera of Pachybrachys, Pachnephorus, Paria, Metacroma, and Myochrous, not however the species in question. Fitch describes 4 species of *Anamola* on the grape. I have seen two of the species: they are small brownish beetle also.

I would here remark that the species sent me would mislead a person on comparing them with cabinet specimens. The fine villous hairs on the head, thorax, and in ten lines on each elytra, are easily rubbed off, when the elytra appear of a chestnut brown color, instead of a foxy reddish-grey, caused by the silky covering of the hairs. In the nude state the elytra have 10 lines of punctures along their entire length; the thighs, shins down to the claws, are villous under the lens, as is the body beneath. Upon handling they become more or apparently quite naked.

I did not find a single specimen in Mr. Rathvon's extensive cabinet, now in the rooms of the Linnæan Society of Lancaster. Unfortunately the specimens you sent me became so dry that I had to handle them with great care, and mistook collodion in a vial for alcohol, in which I put them, so that I fear they will have a coating of gun-cotton when pinned up and dry.

A word of advice, and I am done. Strategy is fair in the beetle. You look for him, and he drops down among the particles of matter: you look for a *moving object*, but he *don't move*, and you loose sight of him. Now the plan is this, when a vine is infected, spread a cloth beneath it, then look for him, by shaking the vines, he drops on your cloth, and will be quiet long enough to fold him up in it; but not not attempt to drown him in water as the water and it is no go; fire is a surer place to dispose of him. If you wish to conquer, diligence and perseverance will do much.

I omitted to mention that the grub is as bad

as the beetle, and its history is not yet made known. I have them of the steel-blue Grape Beetle [*Haltica chalybea*, Illig.), or Grape Flea-beetle (*Graptodera chalybea*), but not of this.

A LEAF FROM THE HISTORY OF FERNS.

BY SWIFT.

The principles of vegetable growth have been the same in all ages. Whether we examine the present history of the earth, or search into the remote ages of the past, we find that, where certain controlling influences have been combined, a like result has invariably been produced. Ferns, of which so little is really known, and about which so much has been written; around which such a mystery seems to linger continually, were the first productions of the vegetable creation; and singularly enough, they are the last, or lowest, in the classification of modern Botany. No class of plants are so interesting as Ferns, the various forms which the foliage assume, the peculiar manner of fructification, and above all, the fact that they formed the principle feature in the landscape during the primitive Flora, awaken in the mind of the most indifferent a feeling akin to curiosity.

The first traces of vegetation, and that which ceased with the carboniferous era, was simple and grand. The trees and plants were entirely different from any thing we now see. There is nothing to compare with it in the temperate zones, nor within the tropics. During the coal formation of the earth, two-thirds of the vegetable kingdom consisted of Ferns, compared to which the tree-ferns of Australia and South America of this day are mere pigmies. They resembled not the herbaceous ferns which cover the earth now—beautiful as these are—but they seemed more like gigantic arborials,—magnificent forest trees, growing from fifty to a hundred feet high, with trunks smooth and branchless, and producing fronds of a magnitude perfectly inconceivable. One peculiar feature of the landscape was the uniformity, or monotony, of its plants, three-fourths of which belonged to the Cryptogamia.

Thomas N. Jenkins, in his valuable work on Geology, writing on this subject, says:—"In our age we find that different countries, in different climates, produce different plants; but, in the carboniferous era, the same plants grew in Germany, Belgium, France, England, North America, and Australia. This fact proves a uniformity of climate at that period. When North America was discovered, there were found in it only two wild plants that agreed with the vegetation of Europe. But of 53 kinds of plants found in the North American coal-beds, 35 are common in the European coal fields."

It is generally admitted, and with great show of probability, that the earth was enveloped in a dense mist or vapor, through which the sun's rays never penetrated; and having a continual warm atmosphere. Ferns being non-flowering plants, it needs no great stretch of the imagination to account for the luxuriance and immensity of vegetation in that distant period of the earth's history. The dense mist, the continual warm temperature, the moist atmosphere, the absence of direct sunlight; in fact, all the surrounding influences conspired to the end in view: the wood-producing principle.

That the flora of that period did not bear seeds, nor fruit, is evidenced by the fact that "all its species of plants, and almost all their genera passed away before the second period of vegetation set in." We have no means of ascertaining what effect the soil had on vegetable growth, nor of what that soil was composed; but one thing seems certain, and that is, that neither *manure* nor *peat* had any thing to do with the growth of those mammoth Ferns and Lycopods of an extinct race, as these things did not exist. In proof of this, there has not been found a single fossil remains of any animal or fowl that co-existed with the primitive flora of the carboniferous era.

DIANA HAMBURGH GRAPE.

BY JACOB MOORE, ROCHESTER, N. Y.

It may be interesting to the readers of the *Gardener's Monthly*, and to those who have seen this new hybrid on exhibition, to learn how it withstood the past winter. It has passed the ordeal with perfect success. In the autumn of 1864 the vine had two arms; one of these was laid down ond covered with straw and earth, to make sure of its surviving the winter; the other was tied up on the the trellis during the entire winter. I cannot perceive that the arm exposed is injured in the least, and both of the arms are now loaded with clusters much larger than the Concord growing on a trellis near by. I think when the vine acquires sufficient age, it will produce bunches nearly equalling the Hamburgh, both in size and quality.

The White Musk, and all my other hybrids (about twenty of bearing size), were also exposed on the trellis all winter, and nearly all of them escaped injury.

That the Diana Hamburgh is hardier than its native parent, I have every reason to believe. This is true also of most of my other hybrids. The fact is hybridization has a tendency to harden the wood of seedlings so produced, in many instances, and render them capable of withstanding severities which neither the parent varieties could endure.

The seemingly unaccountable circumstance of many of my hybrid seedlings producing white fruit when it was supposed that only pollen of the Black Hamburgh was used in obtaining them, has lately been most satisfactorily accounted for. It seems the person of whom I procured the pollen, shook some of the pollen of the Royal Muscadine in the same glass containing that of the Hamburgh,—hence the White Musk and others, as the result. I knew upon tasting the White Musk that *it could not be* the product of union between the Isabella and Black Hamburgh; both its color and peculiar flavor were against such a belief.

I relate the above circumstance of the mixture, to refute those skeptics who may have considered the fact of white grapes being produced when only black ones could be expected, as evidence that they were not hybrids, which they *most certainly are*, and give *unmistakable* evidence of being, both in the wood, foliage and fruit.

Skeptics on the hybridization of the grape are quite numerous at present, and although consisting principally of ignorant persons who do not know the difference between an anther and a pistil, there are some among them who are in high repute for wisdom in horticultural matters, and who *ought* to know better than to keep such company. There is one of this latter class in this vicinity. This gentleman can entertain one with a lengthy disquisition on the merits of the latest ornamental trees, shrubs, flowers, etc.; and can talk very learnedly on the different species of fungi, but to whom the simple fact of the hybridization of the grape is too incredible for belief. Let us hope that time, reflection, and further developments, will convert all skeptics to the *truth*.

[Our correspondent writes somewhat feelingly on the hybridization question; but this is quite natural under the circumstance, as we personally know how hard it is to be told that an event we feel sure of must "be utterly impossible." We must confess to some surprise at Mr. Barry and Mr. Hovey being found on the platform that these hybrid grapes are no hybrids, as independently of the statement of facts and circumstances, we think the plants themselves fully indicate a hybrid origin.—Ed.]

A WORD ON DWARF PEAR TREES.

BY E. FERRAND, DETROIT, MICH.

Lately Chief of Culture at LeRoys', Angers, France.

It is with regret that I see the great question not yet settled, whether the culture of dwarf Pear tree is a profitable one or not in this country; especially when I have the conviction that the want of success, experienced by many, is only owing to the want of proper information as to the means to follow in the cultivation and management of the plants. The question is a very important one, and consequently must be met boldly, even at the risk of wounding certain susceptibilities.

You must not look to English works for useful information concerning the cultivation of fruits generally, because the climate of England not being propitious to the growth of fruits, the gardeners of that country cannot know much about it: that is to say, so far as out-door culture is concerned, for we must admit that English gardeners are very skillful with in-door cultivation, and there are in England glass orchards very cleverly managed; nor are you to expect from German gardeners more knowledge in that respect. The best works on the subject, so far, are French, among which very good ones have lately been published, not by mere fireside writers, but by essentially practical men, who apply their processes to the trees publicly, which are studied and much admired by daily visitors and regular pupils. Those French publications are the result of the experience of four generations.

Do not object to climate, hot summers, and all such things, on which, for lack of better reasons, every thing is thrown—as it might as well be known at once, that the summer in France, from Paris to the centre, is fully as hot as any hot day of the the short summer experienced in the Middle and Northern States; and that from the center to the south of France, countries with an exceedingly dry atmosphere, the summer begins with the middle of March and lasts till the end of October, often without rain from May to September. Those regions, however, are producing enormous quantities of Pears and fruits of all kinds, a large portion of which are grown on dwarf trees.

The climate of the Middle and Northern States is suitable to the cultivation of the Pear just as well as any, the success depends only on the means applied. Works have been published in this country on Pear culture, but most of them are poor translations or imitations of the French works above referred to, and of which the compilers did not thoroughly understand the scope, as they had never seen the process practically applied; and they cut

off from the books what, in their judgment, they consider unnecessary. Those productions have so far been received as authority; but as long as nothing better will be issued, the Pear question will remain a confused one.

Now I wish to give the Pear lovers some advice, until they can get the full information they need, and also to point out to Horticultural Societies and others interested, the best way to spread and encourage the art of growing magnificent fruits of all sorts.

To the planters I would say: Never plant but one or two year's old tree from the bud, budded or grafted close to the ground. Require it to be well taken up, with all its roots. If a one year tree, cut it from one to two feet above the graft, according to the strength of the plant; if a two years tree, cut all the lateral branches to five or six eyes, for the lowest, to one eye for the highest, the leader six eyes from section of previous year; plant just as deep as it was in the nursery, or no more than one inch deeper. Such a young tree may not give fruit for a couple of years, but it will live; whilst old trees, which you buy on account of their bearing fruit early, are apt to vegetate well one year or so, and then die away, except very especial care has been given to their digging up, as is rarely done, and you have again to go over the operation of planting; so that after ten years of labor, you will often find yourself still at the starting point. Do not let your trees overbear when young, and never be afraid of cutting too much wood from them, as a general thing.

A very important fact, ignored by most persons, is, that the dwarf Pear tree is made more by the training and pruning, than by the stock it is worked on. Indeed, in France there are more dwarf Pear trees on pear stock than there is on quince: the soil only deciding on the choice of which stock to use. It is a great hindrance to success that, in this country, there is a belief that a dwarf Pear must necessarily be worked on the quince; for many soils are not agreeable to the latter, and consequently in such the culture of the dwarf Pear, as understood here, must prove a failure.

The treatment of Pears on pear stock, cultivated on the dwarf form, is about the same as for those on the quince, except that there are more general rules, that cannot be described in such a short article, and which must be applied differently, according to fertility of varieties, or quality of soil; such important questions can only be elucidated by the means I am going to indicate to Horticultural Societies; but, as a general rule, Pears on pear stock do not bear quite as short pruning, and want a little more pinching, (well understood), than do trees on the quince.

I would now call the attention of Horticultural bodies to the following: If you want to develop the culture of the Pear, which is so applicable to the soil and climate of this country; if you wish to see the Pear one of the standard productions of your lands and gardens, as well as a more remunerative one; also, if you want to be able to judge as to the qualities of such and such varieties, and improve the taste of all lovers of fruit, or who long so much to be so; do that which has been done in France, namely, let every Horticultural Society, or even every city of from 15,000 inhabitants and upwards, get from two to four acres of land, well fenced in, or better, enclosed with a good wall, and make it a practical school. Get a professional man who has had practice, and who has diplomas of his capacities, and give such a man the charge of that garden, that he may there train trees in all forms, and twice a week perform publicly all the work of pruning, training, pinching, etc., according to seasons; let all the work be made openly, and let access be free to every one; there the Professor will explain what he does, as he does it: why he cut this and not that, and so on; and you will see, as they are seeing in France, people of all conditions come, and study to learn better than from books; and when they return home they will apply to their own trees the processes they have seen developed, and the culture of the Pear will soon become general. Such schools have been established all over France, for the last eighteen years,—the Government and Horticultural Societies subscribing to the salary of an able culturist, who can attend to four or five different cities, making the cost to each but trifling. The results are satisfactory above all calculation, and explains why in France such regularly formed trees are seen: each limb being made to burst exactly where desired, and the bearing of fruit regulated as a work of art. It also gives reasons for the enormous size of all kinds of fruits now raised in France, and sent to England and Russia, and all over northern Europe. Now-a-days a gardener in France cannot get employment in any good establishment unless he is provided with testimonials, attesting that he has been attending those Pomological courses for at least two seasons, and diplomas of ability to cultivate fruits are awarded after a regular practical examination.

Should any Horticultural Societies give the plan a trial, let me caution them to be sure they give it in charge of a capable and responsible person.

FAMILIAR BIRDS.

BY J. P. NORRIS.

V.—THE CAT BIRD.

The Cat Bird (*Mimus caroliniensis*), is one of our commonest, and we may add, most despised birds. Whence this hatred to a really useful bird originally came, we know not. It is easy to explain how the Cat Bird comes to be hated now. The farmer (following the example which his father set him), instructs his son to take his gun and guard the Cherry tree, as, he tells him, the birds "steal all his Cherries, and give him no return." Ignorant man! sad it is for thee not to know thy best friend! The boy, thus instructed, shoots every bird that approaches the tree. In this manner the first seeds of an enmity, that is to spring up in after life, are planted. The boy takes every opportunity to destroy both the nest and the parent bird herself. He grows up to manhood, and the lessons that his father taught him remain with full force. Thus this hatred to a beneficial bird is established.

It is wonderful how many Cat Birds there are, considering how persecuted they have been. A schoolboy, who will respect a Robin's or a Blue Bird's nest, will think nothing of destroying a Cat Bird's. Let this persecution be stopped. If farmers will only watch the habits of Cat Birds, they will see that they are insectivorous bird in the fullest meaning of the term. We appeal to men of judgment to look after their own interests.

The Cat Bird is familiar and confiding. She places her nest in the bush that grows beside your door, and relies on your sense of honor for her protection. Very slight are the efforts to conceal it. You are at liberty to know it is there, and you may walk by it as often as you please without the parent birds caring; but raise your hand to disturb its contents, and a piteous cry, enough to move the heart of a stone, assails you. No bird that we are acquainted with defends her young better than the Cat Bird.

The Cat Bird is very inquisitive. Seat yourself near a hedge, and the first note you are sure to hear is that of the Cat Bird; remain seated there any length of time, and her curiosity knows no bounds. First she peers on this side and then on that, all the while demanding what is your business.

Often have we listened to the attempts of this bird to sing. They can mimic other birds, but it cannot sing itself. There is a certain chatter about its song, which closely resembles the vivacious conversation of a thorough lady of the world.

The number of insects that the Cat Bird destroys is enormous, and the small reward which it claims in the shape of a few cherries, is justly due.

EXPERIMENTS IN PROTECTING FRUIT TREES THE PAST WINTER.

BY DR. JAMES WEED, MUSCATINE, IOWA.

In mild weather, the beginning of December last, we had three enclosures made, covering respectively Peaches, Apricots, and tender Cherries. Each consisted of two shutters, twenty feet long, about eight wide, with requisite gable ends, made of a single covering of inch boards, to be covered externally with a thatching of straw.

They were completed on the 6th of December, except the thatching, being well mulched about the base with leaves. The 7th was too cold to thatch. On the 8th the thermometer indicated 14° below zero; on the 9th 12°, and on the 11th a maximum of 16° was reached,—the severest cold of the winter.

The Apricot and Cherry trees were planted in the spring of last year. Hale's Early Peach covered were planted spring of '63, and were killed nearly down to the roots by the very extreme cold of January 1st.'64, which caused a vigorous growth of young wood last summer, unfavorable to fruitfulness, and but few fruit-buds were formed.

In the absence of the straw covering, we had fears for the safety of the buds; but, except in the Apricot house, which was not as close as the others, they were not injured. A part of the Apricot buds were destroyed, but on some of the trees enough were saved, and they are now maturing three to five dozen of fruit each. We believe this is the method *par excellance* for growing the Apricot. The buds on the Hale's Early Peach set their fruits much more generally than other kinds in the house. We have a favorable opinion of this new variety; at least the tree appears to be better than any other early one we have tried, and we are anxiously waiting to see the fruit at maturity.

The trees in our old houses are producing well. No peach blossoms in the open air in this region, and Hale's Early, and other trees in the same rows and precisely the same condition as those protected, in respect to growth, were killed nearly to the ground.

Waste not a pint of rain water. Let every drop be caught somehow, for it is the best of all water for plants.

Hoe the surface of the ground all over once a fortnight, upon the same principle as servants sweep the rooms.

The Gardener's Monthly.

PHILADELPHIA, AUGUST, 1865.

☞ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

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NATURAL SELECTION AND THIN SEEDING.

When penning our remarks on this subject in our last number, we had heard of some experiments of the same kind with Potatoes, as Hallett had made with Wheat, by Mr. A. W. Harrison, of Philadelphia; but beyond the fact that something was being tried with whole Potatoes for sets, we knew little. A few days ago, we visited the grounds of this gentleman, and were pleased to find the trials going on to the fullest extent, and very much after the manner we suggested in our article. What we recommended as worthy of being tried, was actually under experiment at the time of our writing, and in a fair way for showing the final result.

Mr. Harrison has a field of ten acres devoted to Potato experiments. He has gathered together perhaps a score or so of the best known old, and most of the new varieties, to grow side by side, to test their relative merits. A strong believer in the idea that the best plants are produced from the strongest seeds or buds, he has selected the largest and best Potatoes he could find, and these he has *planted whole*. He calculates to save the largest and best this way for seed every year; and expects, like Hallett has done with his Wheat, to fix this large and fine habit as a permanent character of his seed. But knowing well that "thin seeding" must go with strong growth, to get any good results, he plants these Potatoes 3 feet apart every way. In fact, the Potato drills are marked out by the plough, just as one would for corn; and the Potatoes dropped at the intersections, just as corn hills are. By this plan he not only gives his Potato plants plenty of room for their perfect development; but he is enabled to cultivate with the horse-hoe, in four different directions, thus keeping the crop entirely clean up to the entire time of its ripening, which cannot be done under the popular drill system, wherein there is a continual struggle, almost from the first, for mastery between the Potatoes and the weeds, to the ultimate triumph of the latter.

When we saw the Potatoes they were just coming into bloom, and the ten acre lot was a magnificent sight to see. Although each Potato had nine square feet to itself, that space was as entirely covered as the small space given to each Potato set in the regular way, and the promise was certainly extraordinary. However, let the result be what it will, Mr. H. has kindly promised to give us the entire particulars at the harvesting the crop, for our readers in due season.

As the article of our correspondent, A. C., on the Hallett Wheat has excited considerable attention, we give a sketch of what he had raised in 1861, (Fig. 2.), by yearly selection from the original (Fig. 1.), in 1857. Our page is scarcely long enough to show the entire length of the ear.

HEATED SURFACE SOILS PRODUCTIVE OF DISEASE.

We saw recently a very singular circumstance, from which a lesson may be drawn.

A friend had a large block of Egg-plants, half of which had been hoed and cleaned, when a rain storm coming on, the other half was neglected. It so happened that the cleaned half was afterwards kept clean, and the other half neglected till near mid-summer, when they also were cleaned out and attended to. The cleaned ones were very much troubled with the cabbage-fly, while the ones left weedy entirely escaped; and the latter are now double the size, and every way much better than those so carefully attended to.

Our friend, in conversation, assured us that he had invariably found crops do better for being left a little weedy at the start, and was seriously thinking of reducing his observations to some sort of system.

The only regret we had at hearing these facts was, that, if they were facts, it was unfortunate in affording excuses for lazy gardeners, and for "neglected culture" with those who can only learn enough of a good idea to spoil it altogether; but, remembering our motto, "To take facts as we find them," we have thought it worth while to "say something" on the subject.

In the first place, it is a well ascertained fact that the earth is cooler under a grass surface than under a clean cultivated one. The simple experiment of laying one's hand on a piece of sod on a closely mown lawn, and then on a piece of cleaned garden ground, is in itself sufficient to teach us this lesson, without the aid of thermometrical experiments.

Fig. 1.—ORIGINAL EAR, TAKEN IN 1857, FROM A FIELD OF RED NURSERY WHEAT, GROWN IN ENGLAND.

Fig. 2.—ACTUAL SIZE AFTER FOUR YEARS REPEATED SELECTION, STARTING FROM A SINGLE GRAIN IN EACH YEAR.

A Case, containing among others the *Original Ear* from which the large engraving was taken, was exhibited, at the request of the Council of the Royal Horticultural Society, in their Council Room at South Kensington.

The only danger from the principle is, that the grass may be left to grow too long, in which case the plants may suffer more from the loss of moisture absorbed by the weeds, or the ground will get poor by the loss of so much nutriment being robbed from the soil;—if one could only decide on the just medium between the two extremes, we are sure there would be some good in the idea.

It is a certain fact that leaf-blight on young Pear seedlings commences its ravages the soonest on nicely cleaned ground; and the more hot the surface of the ground becomes by the absorption of heat, the more prevalent is the disease. On loose peaty soils, the surface of which is never hot in summer, the leaf-blight is rarely severe; or in those made garden soils, where, by long culture, the soil has become so fibrous that it is always cool. Wherever the surface bakes, and becomes in summer like a heated flat-iron, Pear seedlings cannot be raised alone,—but Apple seedlings, or some other thing that will afford a partial screen to the ground from the sun's rays, have to be sown together with them. Yet in these districts, wherever the Pear struggles through its first few years' existence, so as to afford by its branches some shade,—or, if the surface be allowed to get in grass, and thus keep the soil cool, there is no healthier or certain crop in the world than the Pear.

We hope the attention of cultivators will be turned to what we have said,—not understanding us to say that they should "let their crops grow up in weeds and grass;" but to the fact that insects, fungi, and many diseases follow an excessively heated surface; and, that if there is any way by which they can keep the surface soil cool without having it dried up, or robbed of the nutriment designed for their crops, it will be to their interest to attend to it.

MERE SENTIMENT.

Referring to cheap vineries, last month, we tried to show how we often deceive ourselves by a mere sentiment, that will not bear the stronger test of reason. "What is worth doing at all is worth doing well," keeps many an one from doing well the little good he can do.

So also do we deceive ourselves in the use of the terms *good* and *bad*, as applied to fruits. The following, from a Report of the meeting of the Fruit-growers' Society of Western New York, affords a very good text for this occasion:

"Charles Downing thought the Triomphe de Gand best of all for family use. It is not so productive as some others, but he preferred one quart of good berries to three quarts of bad ones. He liked the Jenny Lind better than the Early Scarlet. He stated that the Crimson Favor, a new variety, he thought would prove very large, very early, and of fine flavor, but was not productive.

H. T. Brooks, of Wyoming county, regards *quality* as the main point for home consumption—that it was cheaper to raise good strawberries than to buy sugar. If his object was merely to "fill up," he would raise pumpkins for this purpose—but as he preferred fine quality—he would raise only the best—be the same more or less.

J. Crane, of Lockport, preferred Burr's New Pine, but Charles Downing objected on account of its inferior size, as we do not wish to spend a great deal of time in picking."

Nothing shows more conclusively than the remarks of Mr. Dowining the fallacy of a 'sentiment.' He "preferred one quart of good berries to three quarts of bad ones," when some variety he did not like was under discussion; but when a good one, though small, was the subject, it "was a waste of time to pick them," and the inference is, he would rather have "three quarts of bad ones" than one quart of Burr's Pine, if they could be gathered in the same time as these 'good' ones.

Mr. Brooks thought it "cheaper to raise good Strawberries than to buy sugar," another very pretty sentiment as it stands: but meaningless when it is remembered that no Strawberries are sent to the table without sugar. Some, indeed, as for instance the late Mr. Longworth, argue that what the lemon is to the punch, sugar is to the Strawberry: that it is no good without it; and that a Strawberry should require sugar to make it palateable, is one of its merits. "If," he adds, "he merely wanted to 'fill up,' he would grow pumpkins;" which would be all very well if the 'bad' Strawberries were so *very* bad; but, as Tom Diconary says, "There is some difference between singing and splitting one's throat." "He would raise only the best," be that "more or less." But we guess we should not find among his chief garden idols Lennig's White Strawberry, or Needham's White Blackberry, Black Hamburg Grapes or Pine-apples, or "any thing that is best" alone.

The fact is, that celebrated Fox, who deemed grapes he could not reach 'sour grapes,' was more of a philosopher than we give him credit for. What we cannot get may as well be sour. Laugh as we will about our 'pumpkin' notions, it is human nature to admire size. Size is not always perfection, but it is generally one of its attributes. As to "filling up," abundance, like size, is invariably pleasing. The Cornucopiæ would look like an extinguisher on ones pleasures but for the plenty we see rolling out of it.

Friends may preach against it as they will, but a tree that bears large fruit and plenty of it, will be always popular. It is human nature that it should be so. Those angelic trees that shower their blessings on us poor mortals in the "few and far between" style, are better fitted for some other pomological sphere than for this matter of fact world of ours.

The true philosophy is, to get size and plenty and vigorous healthy growth in one plant, as near perfection as it can be, as in the Concord Grape, for instance. If, after this, you find another grape inferior in vigor and health, and size, and productiveness, but a trifle better in flavor than your rough and ready Concord, you need not at once look on your favorite fruit as a mere 'stuffer,' or class it with a 'pumpkin.' Moderate your sentiments, good friends. Pleasantries are good, but all the better for being used in moderation.

FRUIT-GROWING AT PITTSBURGH.

As we stated in our last, we journied over the mountains, for the express purpose of seeing something of Pittsburgh Strawberries, to tell our readers about; and certainly, though to Cincinnati is due the credit of starting the great popularity of the Strawberry as "the people's fruit," to Pittsburgh is due the honor of so systematising and improving the culture of this delicious berry, as to challenge the admiration of the world. Our visit to Knox's grounds abundantly repaid us for our journey—more than repaid us—left us, in fact, a debt on future account.

The soil of the Knox fruit farm is a limestone clay,—proverbial as being very favorable to fruit culture; and we take it the sulphurous atmosphere arising from the bituminous smoke of Pittsburgh, ought to be, if modern theories are correct, death to all blights and fungi that make fruit-growing in some parts of the Union a penance, continually suggesting how fallen we are from the happy condition of the garden of Eden. And this reminds us that Brother Knox was once—and for that matter is yet—a minister of the Methodist persuasion; one of the results of whose early efforts in that capacity, on behalf of the improvement of mankind, can still be seen as we pass along the road to his present residence, one and a half miles from the the city, in the shape of a handsome brick church, built through his exertions. This church is now surrounded by hundreds of tall chimneys, belching forth night and day torrents of fire and sulphurous smoke; and we could not help complimenting our host on the courage he must have had to start his missionary enterprise in so strongly Plutonic a spot; but he modestly disclaimed the credit we would award him, by suggesting that, instead of the fiery ordeal we saw the Pittsburghers passing through being indicative of torments, it was the talismanic thread that guided them to happiness. It is however due to him, that he has a clearer conception of what is due to humanity than some of our reverend friends. They tell us what horticultural enjoyments we have lost by the great fall, but set little examples of gardening again: for few American clergymen are famous for their gardens; but the Reverend J. Knox, while doing as much as any of them to remind erring man of his fallen state, does also his best to restore to him some of the joys he has lost by his impertinent curiosity; for he believes every man and woman in the Union should enjoy his little bit of garden ground; and, in the language of Hudibras,

> "He proves his doctrine orthodox
> By apostolic blows and knocks:"

for Knox has been knocking old time notions about pretty severely, until most of the worst ones have nearly passed their equinox.

For, in one thing, Knox has proved that it pays well to put labor and skill into small fruits,—for thereby are small fruits made into large ones; and "quick sales and small profits" improved so as to read 'large' profits. Though his grounds have over 40 acres of Strawberries, so 'quick' are the sales, that this season the store cannot always receive them as fast as they are sold; though sales, on *one day* last year, at the store, came up to *one hundred bushels*,—and as to the profits, we saw the finest selections selling at 75 cents per quart, and second rates at 50, with the inferior ones at 20 and 25 cts., and this so late in the season as the 18th of June.

We need not describe his system. It has been so often done, all our readers know it. Cutting off the runners, not digging or forking about the roots, and mulching with long Rye straw, are the main features. The ill effects of letting runners grow, are well shown all over the grounds, where a few rows of each kind are left with runners for propagation; all these plants are not half the size of the others, nor were the crops anywhere near as large.

In another thing has Knox proved an old notion heterodox, namely, that foreign Strawberries are

unsuited to our climate. It is probable that the American varieties can take better care of themselves than foreign ones can. For those who want a small crop of inferior fruit with little trouble, there are many varieties well adapted; and these with so untameable a nature that all the kindnesses of cultivation are completely lost on them. Some of these foreigners, used to being petted and made much of, cannot descend to this treatment, and seem in many hands to long for the tender nursing they had in the countries from whence they came. Mr. Knox seems to have detected this weak point in them, and to have discovered that by his system they are generally as far ahead of American varieties, as the European man is above our ancient Indian inhabitants. He was the first to show what good treatment would do for Triomphe de Gand. On his grounds we saw the British Queen in splendid condition. Trollope's Victoria also, usually seen so poorly in fruit, is justly so great a favorite with Mr. Knox, that he can scarcely resist planting them largely as his main reliance. He also speaks in strong terms of Nimrod, Ajax, and some others, as doing remarkably well with him. But the greatest of all Knox's Strawberries is undoubtedly the "700," which he will not sell until he can be certain of the name, which he has no doubt he will one day find; and which we have no doubt will prove to be another foreign variety called Jucunda. Nothing which Knox has equals "700." Albany Seedling bears well, but does not equal "700." Triomphe de Gand has a peculiar flavor preferred by many; more of this has "700." Triomphe de Gand is also solid and firm, carries well to the market, and stands the pressure of kitchen fingers, and so does "700." And then its great beauty, for the color has a tinge of vermilion in it, —its coming tolerably early in the season, and continued succession to the end, together with its generally large size,—must make it an universal favorite, when grown after the Knox method. He seems to have tried it and tested it thoroughly, planting in patches all over the place, and by the side of most other varieties, and it comes off superior to all.

There were

> "Thousands to right of them,
> Thousands to the left of them,
> Mysteriously numbered:
> Still there in sight of them,
> Triumphant in spite of them,
> Stood the seven hundred."

A patient once went to his Doctor for a cure for his rheumatism, for which he prescribed. "If it cure you," says he, "please let me know, for I have suffered many years myself." Not of this class is this Strawberry Doctor Knox. He is taking this "700" pill pretty extensively, for we noticed ten acres of it set out in one block, for fruiting next spring.

Also in Grapes does Mr. Knox somewhat deeply dabble; and not less successfully than in Strawberry growing. He finds the two crops good bosom companions. They form a happy family together. The Grape, he thinks, does not like to have the soil deeply dug about it, and yet the feeding roots run rather deep; while the Strawberry roots, running shallow, or rather the feeding roots keeping near the surface, and not requiring continual stirring, they are both content to live together in peace, and do so in prosperity. The rows of grapes are about 8 feet apart, and strawberries grow between the rows. All the varieties of native Grapes seem to do remarkably well here, but the Concord and Diana evidently best of all.

At the time of our visit, Knox's workmen (there were about 160 employed on the grounds) were busy planting out the young grapes struck this spring. Hundreds of thousands, from Iona downwards—that is, from the newest to the oldest—were being set out from frames, where they have been hardened off, to the open ground, and looking more like vigorous Bush-beans than like young vines, as we generally see them. They are struck by the million, in a sand bed, over a cheap hot-water tank, as described by us in an early number of the *Gardener's Monthly*, for which Mr. K. is liberal enough to give full credit. As soon as rooted, they are put two in a pot, and plunged in frames, where they remain until set out as above described.

All the work is done by hand,—each plant having its hole separately trowelled out and the plant set in,- one would suppose at an enormous expense, but Mr. K. says far more profitably than to do it quicker, and not so good with the plow.

Mr. Knox is not largely in other branches of fruit culture, though he has a little of all. His Apple orchard was a model of health, and is very productive,—the trees are branched rather low, and the whole is cropped with the flat-stalked Blue-grass (*Poa compressa*), which Mr. K. thinks highly of for orchard purposes, as the roots do not run deep enough to dry the ground as much as some others, while there is herbage enough to keep the surface cool and bear a fair crop of hay.

We met at Pittsburgh an old correspondent, Mr. H. Bockstoce, who is extensively engaged in Cherry raising. He had a large two-horse wagon loaded with the products of his Cherry farm, and his Black Tartarian and Yellow Spanish, in size and beauty, were quite "sights to see,"—some of them barely going through an inch auger hole. Mr. B.'s orchard was too far out from the city for our limited time, to visit; but he has evidently a high opinion of the crop. The Cherry, he says, requires but a tithe of the labor to care for and prepare for market the Strawberry does, and the fruit is readily disposed of from 4 to 8 dollars per bushel: they are never less than 10 cents per pound, and then were 15. Mr. B. thinks there would be a profit on them at even 5 cents per pound. In the half hour we were with him, he had sold his whole load for $50, and had, he said, obtained $75 for the one he had in the day before. He says the most profitable crops to grow with the Cherry are grass and clover. He is quite sure the Cherry does not interfere with the weight of hay per acre *in the least*, while the Cherry trees, he thinks, keeps healthier this way than by any other treatment. The curculio seemed to 'sting' the Cherries as badly as they do elsewhere; but the healthiness of the trees seemed to ripen the fruit perfectly, in spite of the injury. We did not notice many Plums about Pittsburgh,—but all other things seemed in plenty.

We left Pittsburgh fully impressed with the fact that there is by far too much mystery cast around fruit growing, which is a great injury to its cause. Knox's method consists rather in letting things alone, or, in not suffering them to do too much. He has no expensively under-drained ground, no soil turned up several feet deep, or covered 6 inches deep with manure. He has no elaborate systems of grape pruning, which one must live as old as Methusaleh to learn,—travel from the Rhine to the Rio Grande to understand,—or read every book from the time Noah got drunk in the vineyard, to the time the *Gardener's Monthly* came into existence, to appreciate. His great merit is the simplicity and success of his system, and it is a pleasure for us to record it. It does not cost much to raise good fruit,—and when the idea shall be generally appreciated, we are sure the labors of Mr. Knox, towards bringing about this interesting state of things, will be fully recognized.

TARRING FENCES.

It is not, perhaps, generally known, that by mixing a small quantity of benzine with tar, when about to use it, that it liquifies, and becomes as easily used as thin paint.

It is necessary in the mixture of tar and benzine to take more care in the warming of it, as the slightest contact with flame will cause the benzine to blaze, and hence, for this purpose, a charcoal fire will be best where practicable.

Beyond the saving in material, which as gas tar is not so very dear, may not be material; and the saving in labor, it being so much more easily applied than raw tar,—the appearance of the work after completion is astonishing to those who have not witnessed it.

Tar so prepared and applied makes the wood look more like Japanned-ware, than any thing else we can compare it to.

NOTES ON FRUITS AND FLOWERS.

LINSLEY'S FASTOLLF SEEDLING RASPBERRY.

We received last year a few of these from Mr. Francis Brill, for trial. As they appeared of the same class as Philadelphia, we planted them within a few yards of each other for a fair race. It is quite as hardy as Philadelphia, bears quite as well, is quite as good in quality (which in neither is first class), and may prove a few days earlier. It will be a close run between them for the palm of popularity.

It is probably a mistake to class this Raspberry with the Fastolff variety; it appears of the American breed. None of these varieties are, we think, equal in flavor to the choice foreign sorts; but vigor, hardiness and productiveness, proved to be *very good* fruit, will invariably make a variety popular against varieties tender and more troublesome to raise. The aim of our people is evidently to get something pretty good that grow easy, as in the Concord Grape, and then look for improvements from that point.

CLEMATIS LANUGINOSA.

Many of us know how beautiful is the *Clematis azurea*. In the spring time it is one of the most interesting all flower-garden vines of its season.—*C. lanuginosa* is, however, much finer. We saw a large plant recently in the garden of Charles J. Wister, Esq., of Germantown, with hundreds of beautiful flowers upon it. The flower is of the same beautiful blue color as the *azurea*; but the blossoms are nearly double the size. The plant is entirely hardy.

It is not exactly a new plant, being now several years before the public; but it is not so well known as it deserves to be, few persons, probably, having a correct idea of its great beauty.

THE WHITE CHINESE WISTERIA.

Another plant, the merits of which are only just becoming known. The bunches are of the same size and form as the blue, but of a pure snow white. The foliage is more luxuriant than the old blue variety, and gives the growth a much richer appearance.

THE EMPRESS EUGENIE CHERRY.

This celebrated new English Cherry we saw in fruit this year. It is popular abroad, principally as a variety for orchard-house culture. It is a very early and fine Cherry with us; but not so early as May Duke.

NEW JAPAN IRIS.

We have some cut flowers from Mr. Wood, of Washington Heights, New York, from plants received by him direct from Mr. Hogg, at Yokohoma, Japan. They are extremely beautiful, very distinct from any now grown in gardens, and promise to be among the most popular race of new things, we have had for a long time.

Those of our people who lament that new things have first to come from Europe, will have an excellent chance, thanks to Messrs. Hogg and Wood, to patronize good things direct from their native lands.

OBITUARY.

DEATH OF JAMES DUNDAS, ESQ.

This esteemed gentleman, and eminent patron of Horticulture, died in Philadelphia, on the 4th of July, in his 80th year.

He was born in England, but was, for the most of his long life identified with some of the chief commercial enterprizes of his adopted city of Philadelphia.

He was one of the Vice-Presidents of the Pennsylvania Horticultural Society, a position he had annually been re-elected to for many years and his efforts to improve the public taste eminently deserved.

His extensive greenhouses and conservatories are well known to Horticulturists all over the Union, and many of the beautiful plants that adorn our greenhouses,—too expensive for even enterprising florists to import,—owed their first introduction to, and distribution through our country, to the munificence of Mr. Dundas. He was one of the first to grow the Victoria regia to great perfection after the success of Mr. Caleb Cope, and, as far as we know, the only one who has continued its successful culture to the present time.

The lovers of rare and beautiful flowers can ill spare the loss of one like Mr. Dundas; and none will regret his death more than his fellow members of the Pennsylvania Horticultural Society.

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.

HERMAPHRODITE AND STAMINATE STRAWBERRIES—*B. W. M.*—In an article on Strawberries, by Mr. Prince, of Long Island, page 189 of Patent Office Report, 1861, he comments, page 203, on the Triomphe de Gand. He puts it with all the other European varieties in the class of hermaphrodites, but says:—"Although it is one of the hardiest of the imported varieties, yet, like all others of that family, it cannot be made to succeed in open field culture in any latitude north of the Potomac, unless it be in some warm and sheltered location, and then it must be accompanied by a staminate of its own pure family. Most cultivators claim for it only a moderate crop. The market growers, who have planted it extensively, are destined to disappointment, as already has been the result with every other variety of its class." At the head of this class he says:—"All these varieties, (the European) are hermaphrodite and will require to be accompanied by a staminate of their own species, or of the Chili, in the proportion of one-tenth of the latter."

I think this is a point you Doctors ought to elucidate, for the benefit of the laity. If this mixture will produce a full crop of so fine a berry as the Triomphe, the uninitiated ought to be instructed on this point. What would be the best variety that we have to plant with the Triomphes for fertilizers? Would not the absence or presence of these fertilizers account sometimes for the great difference in the yield of the Triomphe?

[Mr. Prince we think in error on some points in Strawberry management. Hermaphrodite Strawberries have perfect stamens of their own, and need no other variety to fertilize them. Pure staminates have imperfect pistils, and in that state could never be made to bear. They are not, therefore, in cultivation. For all practical purposes, therefore, we may say there are no staminates to be had. All we see are either *hermaphrodites*, having stamens and pistils perfect in the same flower; and *pistillates*, with pistils and stamens imperfect in the same flower. Lennig's White has many staminate flowers usually, which renders it so shy a bearer. We think Triomphe de Gand will bear as good a crop by itself, as with any other variety near it.

Mr. Prince is doubtless in error in regard to the bearing character of foreign varieties. Some few bear poor crops, as do also some native ones; others are equal to any thing we have. We see no reason to make any distinction of this kind. Triomphe de Gand does not bear well when the plants run together in a bed. With the runners cut off between the rows it is productive.]

RAISING STRAWBERRY PLANTS—*P. Q. R., Williamsburg, N. Y.*—"I have a dozen plants set of a Strawberry I am anxious to make the most of, what is the best mode of procedure?"

[Put rich earth around your plants. As soon as they run, peg the point of the runner firmly to the soil. As soon as white fibrous roots have pushed an inch long, cut the runner from the parent stem, which will induce the plant to soon send out a new set of runners. For the rooted runners prepare a hotbed of fermenting stable manure, in which put about six inches of soil, and sash over. As soon as it is reduced to a proper temperature, say 80° or 90° bottom heat, plant in the soil the runners cut off, and keep moist and close for a few days. They will soon start and grow, and make more runners, which can be treated in the same way. Keep the frame warm by covering when the cool nights come, and you may keep the plants running and rooting up to New Year's day, and from your dozen plants get several hundreds.]

DRYING SEEDS BEFORE SOWING—*J. M. J., St. Louis, Mo.*—"Having had some experience in growing seedlings, and sprouting seed, I wish you would inform me if seeds that are matured in moist fruit, like the Apple, Pear, or the *Osage Orange*, grow without first letting dry before planting? I have never seen an Apple seed growing within the apple. Although frozen and rotten, I have tried to grow Osage seed by keeping the fruit through the winter, allowing it to freeze, and then in spring make it thin with water, and run it through a watering pot, in drills and have failed, but where the seed have dried, they grew well.

[All pulpy seeds should be washed from the pulp, dried *in the shade*, put away in tight boxes, and kept as cool as possible till time to sow. We have seen failures from seeds taken immediately from the pulp; but did not know the rule was so general as from the querist's experience it seems to be.]

SPEER'S SAMBURG PORT WINE GRAPE.—A circular has been sent us by a correspondent for our opinion as to its 'reliability.' We know nothing of Mr. Speer or his vineyard "in New Jersey;" but from what the circular tells us we may hazard a guess that the thing looks like a complete fraud on the community.

That the "Samburg Port Grape" grows in "the vineyards of Alfred Speer of New Jersey" "large clusters," "dark purple," "nearly the size of Isabellas," "is the grape from which the finest Port wine in Portugal is made," and is only "pure from the vineyards of Alfred Speer, in New Jersey," is humbug, even to draw it very mild; and that Doctors Parrish and Condie, of Philadelphia, should testify that it is the "pure and unadulterated juice of the grape," and all it claims to be," gives us a poor opinion of eminent names.

We have not examined this "pure grape juice," but venture a guess that it is from Elderberries, and in this sense may be truly from the vineyards of Alfred Speer, "in New Jersey."

SIR JOSEPH PAXTON.—Our notice of this distinguished Horticulturist was drawn up just as we were going to press with our last number, from such materials as were floating in our memory at the time. Since then we have received the English journals, with their accounts of his life, and find that we were wrong in stating that the Secretary of the Hort. Society who dismissed Paxton from the gardens was Dr. Lindley, 'probably.' It was, it appears, Sir Joseph Sabine.

NORTON'S VIRGINIA GRAPES.—An intelligent correspondent, writing from St. Louis, Mo., says:

"This promises to be one of the best years for the growth of plants and trees, we have had abundance of gentle showers, and every thing is making a fine growth." Grapes look very promising. Wine from the Norton's Virginia seedling sells at $18 per dozen, it was the produce of Hermann in this State, and is considered by experienced judges equal to fair Burgundy,—there is no mistake about its being the best yet produced from the American Grape.

SUCCESSFUL STRIKE OF DELAWARE CUTTINGS—*J. C., Prairie City, Ill.*—"For your advice in one of last Fall's *Monthly*, on the care of Grape cuttings, and how to make Delaware wood grow, I thank you. I tried your plan, and it is a fact that *almost every cutting is growing, and even better than Concord* in the same bed."

American Horticultural Register.—In the proper column is an advertisement of Mr. W. C. Flagg, of Alton, Ills., of interest to every Nurseryman and Fruit-grower,—and we trust they will cordially co-operate with him, and thus enable him to make his useful work as perfect as possible.

Fruit in Western Pennsylvania.—*O, T. H., Randolph, Pa.*, writes: "The fruit crop is very light here, in consequence of the great drouth last season. Only a few fruit buds were formed. Grapes were mostly killed by late frost. The sum total for N. W. Pennsylvania will be about one-tenth part of a fruit crop."

Loss of Papers through the Mail.—We thought, from the many complaints from subscribers, that the mail used us badly; but by the following from the *Tribune*, we judge we are treated quite generously:

"We have lost not less than Five Thousand subscribers within the last six months from Mail failures. They wanted our paper still, and were willing to pay for it; but what use to subscribe and pay when no money would bring it? To take a daily newspaper, and receive two days late, and two or three at a time, is not so mean as depending on the loan of your neighbors; but quite as great a trial to patience.

Men and brethren, what shall we do?

Books, Catalogues, &c.

Sermons on the Death of Abraham Lincoln. Published by J. E. Tilton & Co., Boston, Mass.

We have received from the publishers a copy of this work, which is issued in their usual beautiful style, well worthy of the subject of the work itself.

This is a collection of the best efforts of the most eminent divines of Boston, and will be every where received with the interest it deserves.

Woodward's Graperies (so-called).—Mr. Editor: In your last issue, I find a review of the so-called "Woodward's Graperies," in regard to which I ask the privilege of saying a few words. I have no comments to make on your criticisms; but they give me the opportunity of claiming what is my own, and exposing what I conceive to be an unblushing fraud upon the public.

With but two or three exceptions, *the designs in that book were made by myself*, and some of them a dozen or more years before I knew Mr. Geo. Woodward; and yet you will look in vain for one word of that credit which is recognized by all fair-minded and honorable men. So, too, of the descriptive matter: a large part of it is taken from my editorials in the *Horticulturist*, in which the designs were published, while that magazine was under my care; and yet, again, not a word of credit is given to me. So far from this, the book is put forth as an original one by Mr. Woodward. It would be curious to know if some sense of shame did not mantle his cheeks while he was penning the title-page. It is to be hoped, for the sake of his manhood, that it did. I trust that he built no hopes on the fact that he "bought the *Horticulturist*," and that I would remain silent while he made this wholesale appropriation of my poor brains, and foisted them upon the public as his own. If he did, he is doomed to a bitter disappointment; for every body who reads shall know how indulgence in a mean spite can sometimes make a man forget what is due to candor and truth.

Mr. Woodward has sometimes forgotten to alter the editorial pronouns, or, it may be, for a purpose easily seen through, he designedly refrained from altering them; in either case, he puts in his own mouth words that are positively false. Not to take up too much of your space, I will give one example out of many. In the description of Mr. Cheney's grapery, Mr. Woodward says, "during *our* last visit," "we," etc. Why, Mr. Woodward has never seen Mr. Cheney's house, and knows no more about it than you do. I made the plan, and the house was built, before I had any thing to do with Mr. Geo. E. Woodward; and this remark will hold good of a number of the designs. He has never seen the houses, and knows no more about them than anybody else who has read my editorials in the *Horticulturist;* and he did not make the designs of those that he has seen. Some of the houses he could not locate precisely, though his life depended upon it: and yet he puts these designs before the public as his own. Comment is unnecessary.

Like many others who attempt subjects of which they are not masters, Mr. Woodward falls into some very curious blunders, which a practical man will readily detect, and which I will point out in another article.

It is no pleasure to me to place Mr. Woodward in such a humiliating position before the public; but his utter disregard of the rights and courtesies of authorship, has left me no middle course to pursue.

With many thanks, Mr. Editor, for your indulgence, I am, Yours, with much respect,

Tinaffy, N. J. Peter B. Mead.

New and Rare Plants.

Ceropegia Gardneri (Gardner's Ceropegia.—This lovely plant is a native of Ceylon, and was discovered near Rambaddo, by the well-known botanist Mr. Gardner, at an altitude of 4,000 or 5,000 feet above the level of the sea. It belongs to the same family as the Ceropegia elegans of the Neilgherries, which it very much resembles, but is infinitely more showy, having larger leaves, and bearing a more beautiful flower. Like most plants of this class, it is a creeper, the stem is bare and slender, the leaves opposite, lanceolate, acuminate, and almost nerveless, having the petiole long and subcordiform at the base. The upper surface of the leaf is a dark green, while the lower surface is as long, if not longer, than the petiole, dividing at its apex into five or six pedicels. The calyx has its sepals, which are linear, pointed, and swollen dorsally, divided almost to their base. The tube of the corolla, swelling at the base, suddenly contracts, and then spreads into a very large limb, which is thickly bearded interiorly at the point of contraction. The formation of the five lobes is very remarkable; the finely haired margins are a dark purple, and growing among the fine hairs are others, much coarser, unusually long, and a reddish-brown in color. The coherent apex of these lobes is green, girded with a dark brown round the upper circle; the base of the corolla is whitish, delicately marked with purple, while the lobes are thickly covered with large irregular rich brown spots.

There is nothing special to be said concerning the culture of this beautiful plant. The soil should of course be rich and permeable; and it can be trained with equal advantage over a balloon or parasol-shaped trellis, or one made in the form of a pyramid. Perhaps the parasol design is preferable, as beneath it the flowers can hang in lovely unfettered clusters.—*Gardener's Weekly.*

Japan Primroses.—Among new plants were some charming Japanese Primulas, from Mr. Veitch. They consisted of P. cortusoides amœna, which, although shown and described by us before, was reproduced on this occasion in much more beautiful condition than we have ever yet seen it; along with it were two others from the same country; one of them named P. cortusiodes grandiflora had large drooping saucer-shaped blossoms, pinkish-lilac outside and pale inside; the other, which was named P. cortusoides alba, was considerably lighter in color than either of the preceding. To each of them was awarded a First-class Certificate. —*Gardener's Chronicle.*

Double Mimulus.—This remarkable curiosity is to be sent out in the course of the spring. In the samples before us, showing some three or four different styles of spotting, the corolla exactly resembles some of the forms commonly known in gardens as Mimulus maculosus, but instead of the calyx being of its usual form and green color, this organ is converted into a colored body, almost exactly like the corolla in size and form, and like it brightly colored and handsomely spotted.

Of course, looking at the Mimulus as a florist's flower, this new feature is a defect, inasmuch as it interferes with the 'properties' which are required to constitute a perfect flower; but regarding it as a decorative plant, it is a very great advantage. No one can doubt or dispute the beauty of some of the fine varieties of Mimulus, but the defect of the plant from a garden point of view is, that the flowers drop too soon: the beauty is not enduring. Now, leaving out of question altogether the fact that here the ornamental part of the plant is at once doubled in quantity, there remains the very important fact that be the corolla ever so fleeting or evanescent, when it falls the plant to all intents and purposes, still remains in flower. The calyx is virtually itself a flower, as far as ornament is concerned, and this part does not fall like the corolla, but lasts as long as its substance will endure.

We are informed that this new strain, which may be distinguished as the *duplex Mimulus*, has sprung from Mimulus maculosus, which it quite resembles in color and markings. Its great merit is that the flowers, as represented by the outer of the two floral whorls, remain persistent for a period hitherto unknown among Mimuluses.—*Chronicle.*

Camellia Petazzi—This unusually beautiful variety of the Camellia was produced in Italy. The imbrication of the petals, which are large, round, and faintly crenated, is perfect; and the arrangement of their rich coloring is rare and worthy of note, the marginal petals being unvariegated, while those between the margin and centre of the corolla are more or less striped with white, and the

centre of the flower is the same lovely rose-pink as the circumference.—*L'Illustration Horticole.*

GYMNOGRAMMA PEARCII (Messrs. Veitch & Son, Exeter).—A very beautiful finely cut Chilian fern, forming an erect caudex, supporting on brown stipites the triangular fronds of about a foot and a half in height; decompound, being at least quadripinnate, the pinnæ and pinnules each having a triangular outline, and the ultimate segments being very small and narrow, linear in form, bearing a thin short line of spore-cases at the back. The plant is one of extreme elegance.—*Gard. Weekly.*

New and Rare Fruits.

THE PHILADELPHIA RASPBERRY.—The annexed illustration will give some idea of the extraordinary bearing qualities of the Philadelphia Raspberry, samples of which we have received from Mr. Wm. Parry, of New Jersey.

It is extremely difficult,—perhaps impossible,—to get every good point we wish into any one variety. This is perhaps on a combination of properties as near perfection as any thing we have. If it had a little larger size, and was quite equal to some of the English breed in flavor, there would be nothing further desired in the Raspberry.

WILSON'S EARLY BLACKBERRY.—We have this day received from Mr. John S. Collins, of Moorestown, New Jersey, a large box of this new variety, which are certainly beauties to look at, and its extra earliness will commend it to popular favor. At this writing (first week in July), they are dead ripe, and have been for some time,—coming in with the Dorchester. The flavor, in those we have before us, is not equal to Dorchester; but whether this is characteristic of the variety or merely an accidental circumstance with this particular sample, we cannot say.

IVES' SEEDLING GRAPE.—Some Grape-growers are very much in favor of Ives' Seedling. I called on Mr. Ives, and learned the history of this grape. It was raised by him from the seed of the Malaga raisin. Many Grape-prowers doubt the growth of a vine from such a source, but Mr. Ives is quite confident that this seedling had its origin in the above mentioned way. The vine grows rapidly, and is very hardy. Mr. Ives is not a Grape-grower, believing that the culture of grapes is unprofitable. Through the kindness of R. M. Bartlett, who is sole agent for the American Wine-growers' Association, I procured some wine one year old, made from the Ives' Seedling. It is a fine claret, and no doubt will be a valuable acquisition to our dark wine. —*Ohio Farmer.*

NEW FOREIGN CHERRIES.—*Bigarreau Riverchon.*—Large dark-red, nearly black; flesh rich. An excellent late cherry. Tree very prolific.

Rival—Fruit medium size, black; flesh firm, brisk, and rich; not fully ripe till the middle of August, and will hang till September if protected from birds. Tree a most abundant bearer.

Nouvelle Royale—Described by Mr. Rivers as a hybrid between the Kentish and May Duke. It is the largest and latest of the Duke cherries, and is alike remarkable for the size and beauty of its fruit as for the pyramidal and beautiful growth of the tree, which has large glossy leaves. When budded on the Mahaleb, it forms a most ornamental tree or bush, well adapted for the embellishment of a lawn.

Planchoury—This is one of that numerous tribe, the Kentish group of cherries. The fruit is of medium size, and keeps on the tree till September. It is a most abundant bearer, and forms a beautiful pyramid.

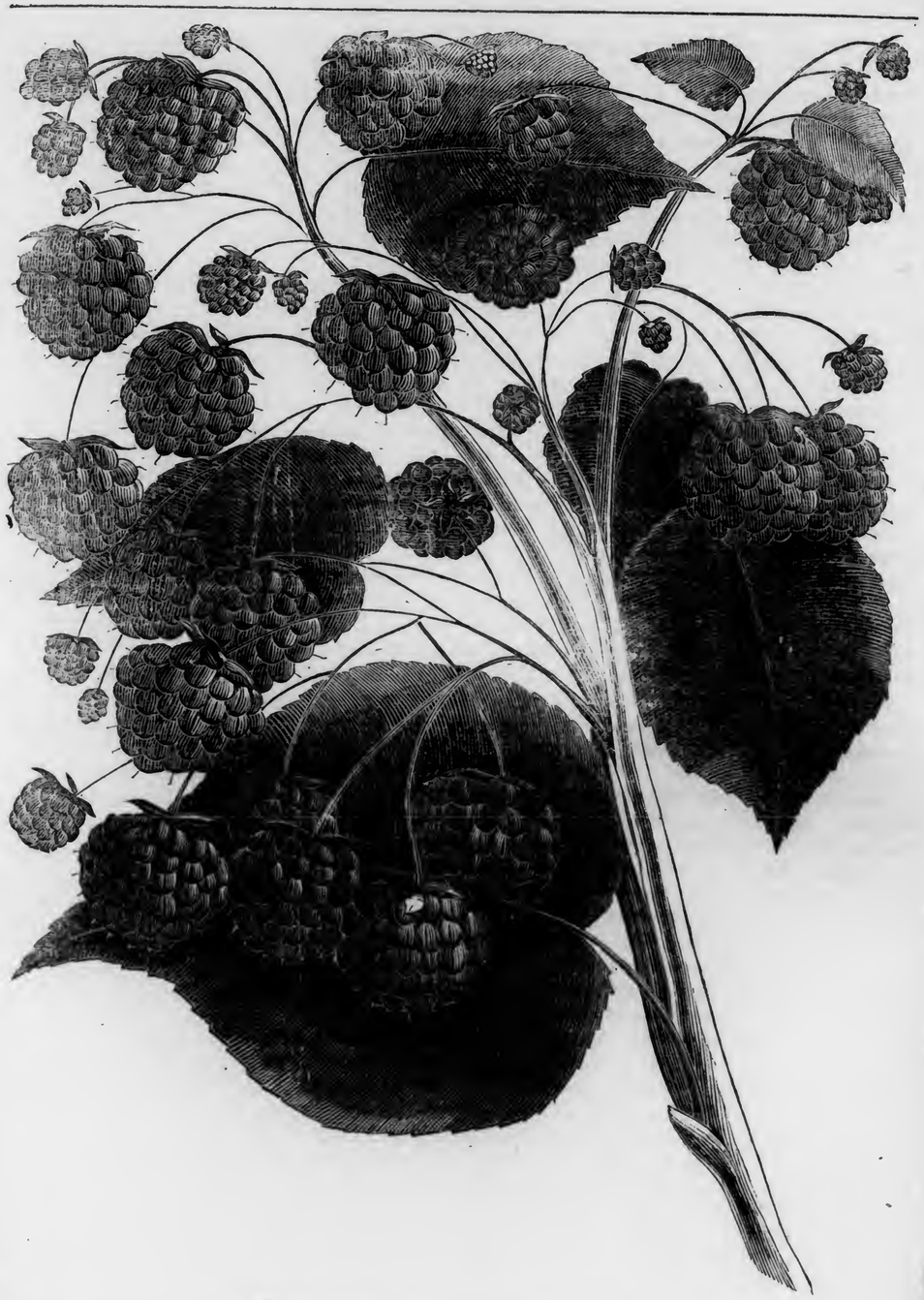
Transparent (Rivers)—A grand Cherry, the fruit large and beautiful, with a refreshing and agreeable flavor. It ripens two or three weeks after May Duke.—*Gardener's Weekly.*

Domestic Intelligence.

LARGE CHESTNUT TREES NEAR PHILADELPHIA.—Dr Martindale says, in *Germantown Telegraph:*

"Among the large trees in Byberry and Moreland, we find mention of a large Chestnut tree, on the farm of the late Franklin Comly, Esq. It was twenty-seven feet in circumference. A very large Willow tree was blown over on Jabez Wilson's house April 2d, 1841; and during the same year a large Oak, about seven feet in diameter, was cut down. It stood between the house and the creek, and made over twenty cords of wood. A very old Pear tree on Watson Comly's farm was cut down in the year 1854. It was nine feet nine inches in circumference, fifty feet in height, and made over three cords of wood. It was over one hundred years of age, and produced fruit until it was cut down.

A large Chestnut tree on John Carver's farm was cut down by Watson Comly, in 1855. It made ten cords of wood and one hundred and sixty posts."



[THE PHILADELPHIA RASPBERRY.]

An Extensive Pear Orchard in Utica, N. Y.—Mr. Snell commenced setting trees twelve years ago, and has now an orchard of 4,000 trees, covering twenty acres. About 400 trees are in bearing, and a more thrifty and beautiful lot of trees together we have never seen.

Mr. Snell is a dairyman, and the home farm contains 152 acres of choice land. The Pear plantations lie along the street, about ten acres on either side of the residence and farm buildings. It is the largest amateur orchard in this part of the State, and as Mr. Snell has experimented considerably in Pear culture, and with a view to adapting varieties to his soil and climate, it may be of interest to our readers to learn something of the peculiarities of his system of culture.

Of the standards, Mr. Snell finds the Flemish Beauty, the Winter Nelis, and Lawrence to succeed remarkably well in his locality. The Bartlett and Seckel are grown to some extent, but nearly three-fourths of the standards are the Flemish Beauty. Of the dwarfs, the varieties mostly esteemed are the Duchesse d'Angoulême, Belle Lucrative, Glout Morceau, Louise Bonne, Beurré Diel, and Vicar of Winkfield. He says, of the latter variety, that it is as easy to produce fruit as to grow so many bushels of Potatoes.

Planting and culture.—The standards are set in rows 30 feet apart, and 12½ feet in the row, and between the standards are rows of dwarfs.

The land is under-drained, and plowed and fitted so as to be in good tilth. The tree is then set even with the surface of the ground, and the earth raised in a mound. In the after cultivation, the plow is run through the rows one way, and the earth thrown towards the tree. This makes the surface of the ground where the tree stands some 20 inches to two feet higher than that in the center between the rows. Root crops, generally Potatoes, are cultivated in the spaces between the trees. Manure is hauled out and spread upon the ridges, where the trees grow, and worked into the soil. Old or well-rotted manures are preferred, though no injury to the trees has been apparent where fresh manure has been used. We never remember to have seen trees grown upon wide ridges in this way; and Mr. Snell's main reasons for planting in this way are, that a deeper soil is obtained for the tree, while the ridges operate to prevent an accumulation of water about the roots, giving a better drainage than could be had by flat culture. At any rate, the growth and thrift of the trees have been a success, and, therefore, the system is adhered to. In one part of the orchard a blight or rust had made its appearance on the fruit, causing it to drop. Mr. S., as a remedy, proposed making a series of experiments with different kinds of manure, to see if there was any defect in the soil.

In setting, spring is preferred as the best season.

The Virgalieu and Seckel do not succeed so well here as the Flemish Beauty. The Bartlett, for the past two years, has done well, but the tree is regarded as rather tender.—*Utica Herald.*

The Newest Phase of the Cheat Qeustion.—A daily paper says:

"A singular fact is connected with the growth of the Oat in Virginia. The seed will degenerate, and in the course of three or four years become Cheat, a kind of birds' grass. To prevent this, the grain has to be imported each year, from the North. As no Oats have been imported lately, the crop there this year will all be Cheat. The farmers will cut this Cheat for hay before it ripens, and next year Timothy will spring up from the Cheat roots."

"Riversdale," the Great Fruit Estate of Col. Edward Wilkins.—This fine estate is about five miles from Chestertown, Maryland, on the banks of Chester River.

The Peaches in the general Peach orchard, comprising a varied assortment, were making vigorous headway—with the exception of about 6 to 800 trees, which are fruitless, from the effects of an early frost. The entire orchards contain about 78,000 growing trees—38,000 bearing this year. There were gathered last year from these trees, about 80,000 boxes of fruit, which were either sent to market or converted into Brandy.

The arrangements for gathering, packing, and distilling, are all methodically laid out. From 100 to 150 hands are employed, which are divided into suitable sized squads, each with its chief—one class being assigned to gathering, and others detailed to assort and pack. The carts to convey the fruit from the orchard to the packing-house—adjacent to the the wharf—carry about 25 or 30 baskets each, are promptly unloaded, and the selecting and packing entrusted to experienced hands, who have boxes in readiness to fill; first, with *Primes*, then *Mediums*, then *Cullings*, each labeled according to grade, and valued accordingly. The boxes are then nailed up, and placed at a convenient point for loading the steamers with the greatest expedition. At one end of the wharf is the *Hospital*, where are received and doctored the *crippled* boxes, delivered by the steamers or otherwise. The *Barracks* is an extensive and convenient building, in close proximity to the wharf, where the laborers lodge and receive their meals. The stuff for putting up the boxes is all split and sawed by steam—in an apartment adjoining the Distillery—to suitable sizes. The boxes also are there put together, and then conveyed to the packers ready for use.

The *Distillery* is one of the most complete 'institutions' on the estate, and to describe it would occupy too much of our space, even were we capable of doing so. In the first place, there is a 20 horse steam boiler, with a proportionately sized vertical engine, which puts in motion the whole apparatus, and two huge presses, in which the fruit is compressed to separate the juice from the pomace. These are connected by means of spouts to three leviathan tubs, each capable of containing 10,000 gallons of cider, which, by a certain process, is again conveyed to other large tubs, when the distilled liquor is finally drawn off according to proof A portion of the crop of Peaches is in this way converted into Peach Brandy of a pure and very superior quality, which we were tempted to test after much importunity (?). Many thousand gallons were distilled last year, which commanded good prices.—*Maryland Farmer.*

Surface Manuring.—Respecting surface manuring, I have this to say, that where the manure lies closely to the ground (a good common soil) but little strength escapes. I find it especially beneficial where the soil is compact, yet mellow, thus forming a more concentrated source of attraction. I think I have seen the best success on soil where clay largely preponderates. Clay, it is now known, I presume, beyond dispute, has an affinity for the principal fertilizing gases. I have never known manure benefit land sufficient to pay expense of cartage and spreading where it is put on late in the spring, and in lumps, as I have often seen it practiced.—*Country Gentleman.*

Strawberries in Boston.—Agreeably to a long established custom, the Fruit Committee of the Massachusetts Horticultural Society, with a few other gentlemen, lately visited the Messrs. Hoveys' Strawberry and Pear plantations in Cambridge.

The Pear trees look well, but do not appear to be very fully laden with fruit, though fairly so. It is a singular fact that these trees seem to have no leaf enemy, as the foliage is entire and rich.

The Strawberry plantations were exceedingly attractive, and most rich laden with fruit. The original La Constante, imported some years since, is still in bearing. One field visited has been in cultivation about ten years in succession, and more productive vines it would be difficult to find, no matter what the culture may have been. Netting was in use to keep off the birds.

After having visited the beautiful and well kept grounds—a short time since comparatively a worthless Whortleberry pasture—now combining the ornamental with the useful in a most remarkable degree—the guests were invited to the residence of C. M. Hovey, Esq., President of the Massachusetts Horticultural Society, where an opportunity was given for testing and comparing more than a score of the most popular varieties of the Strawberry, among which were the following, as near as recollected: La Constante, Empress Eugenie, Napoleon III., Hovey's Seedling, Triomphe de Gand, Margeurite, Duc de Malakoff, Admiral Dundas, Lennig's White, Russell's Prohfic, Wonderful, Austin's Shaker, Green Prolific, Emma, Boston Pine, Capt. Cook, La Sultane, Ambrosia, Prince Frederick William, Victoria, Scott's Seedling, Bonte St. Julien, and others.

The specimens of Ad. Dundas, La Constante, Empress Eugenie, and Duc de Malakoff were remarkably large, some of the berries measuring 7 or more inches in circumference. The 22 varieties, arranged in baskets of 2 to 3 quarts each, made a show of varieties probably never equalled, and was a grand exhibition.

It may be stated in this connection, that Hovey & Co. took the Williams special prize of $20 for the best 4 quarts of Strawberries, of as many varieties exhibited at the Hall of the Massachusetts Horticultural Society.

The Belmont Farmers' Club Strawberry Festival was a success as usual. The proceeds were about $1000. One man in Belmont grew 4000 boxes on an acre, which at 30c. a box sold for $1200, a good income from an acre, beating tobacco as much in price as in quality.—*Boston Cultivator.*

Greenhouses Burnt.—We regret to hear that Mr. Robert Johnston, the skillful gardener and florist, at the Perry Place, has suffered serious loss by the destruction of his Grapery, and Plant-houses by fire. Three thousand promising Verbenas are among the plants lost. We presume Mr. Johnston's intelligent skill and industry will be invoked to repair the damage, and that Flora and Pomona will still be presiding at the Perry Place.—*Providence (R. I.) Journal.*

Varieties of Apples for Illinois.—I would recommend to any one who wishes to set out an orchard in this portion of Southern Illinois, the following trees for an orchard of five hundred trees for market.

Summer varieties—50 Red June, 50 Red Astrachan, 75 Early Harvest, 50 Summer Queen.

Fall Varieties—10 Rambo, 15 Gravenstein, 10 Fall Pippin.

Winter Varieties—33 Rawle's Janet, 33 Willow Twig, 33 Baldwin, 25 White Bellflower (Ortley), 50 Wine Sap, 37 Baltimore Red, 37 Rome Beauty, and the same proportion for an orchard of one thousand trees.

Good cultivation is always important where a good and thrifty orchard is desired, and constant watchfulness in regard to the borer and other insects that infest the same is necessary.—A. P. Crosby, Marion Co., Ill., in *Rural World*.

New Cheap Roofing.—James M. Allen, of Fredericktown, Ohio, exhibited numerous specimens of wood, paper, cloth, and felting, coated with slate of various thicknesses, so firmly adhering to the substance that it cannot be detached, and apparently so indestructible, that it cannot be effected by fire or water. The wood may be burned to a coal, but the slate remains. The whole secret of the application is so simple that any common mason or plasterer can make a slate roof without a crack or joint in the whole surface; and some that have been several years in use in Saratoga County appear to improve by age.

The discoverer of the process is a Yankee, of course—the owner of a grist mill, founded upon slate rock. Whittling a piece of it one day, he *guessed* that he could make something of the flour, and straightway he set the mill at work. Then he began experimenting, to see what his slate flour was good for. He found by mixing it with raw coal tar, to any degree of thickness, either for the brush or trowel, that it adhered firmly to, and in a short time hardened into a firm sheet of slate. You might burn away the wood, the slate remained. If spread upon a roof, exposed to a hot sun, the tar would not liquify and run off, it only evaporated slowly and the slate remained. Of all other substances tried, nothing equalled this slate flour. The whittling Yankee was then satisfied that he had made a discovery, and one worthy of a patent. It is for the public to determine its value. A ton of this slate flour, put up in six barrels, can be sold for $6. I will estimate the value of two barrels of coal tar at $4. This is material enough to cover 17 squares (10x10 feet) of roof. It should be put upon felting, as wood shrinks and swells, which would cost, say 35 cents a square, $5.95; tacking it on roof, $2.50; putting on the composition, $4.25, making the total cost of 17 squares of finished roof $22.70; to which add cost of freight of materials to any locality.

The cost of a gravel roof is $7 to $10 a square. The lowest cost of tin is $12 a square, and for good tin $15 to 17; and one made of slates about the same, though requiring stronger wood-work.

It is not necessary to have the felting saturated with tar at the mill, indeed, it would probable be better for this mastic slate roof to use the felting untarred, as it is cheaper and more convenient to handle, and can be bought in this city at 4½ cents per pound. It is made of old woolen rags and other fibrous substances, somewhat in the same way that paper is made. One of the first experiments made by Mr. Potter, was to spread the mastic over an old shingle roof upon his saw-mill. This was three years ago, and that coating is better to-day than it was at first, and effectually resists all the influences of the sun's rays, and is impervious to rain, snow, and ice.—*New-York Tribune.*

Arrow Root in South Carolina.—A correspondent of the Charleston *Courier*, writing from Beaufort, thus speaks of the cultivation of Arrow Root in that place:

"The Arrow Root, too, bids fair to become no unimportant item in our agricultural resources. Our enterprising neighbor, D. L. Thompson, Esq., the most successful cultivator of this esculent, has produced an article said to be equal, if not superior, to the far-famed Bermuda."

Fruit in Southern Illinois.—A correspondent of the New-York *Tribune*, thus writes:

"Here the farmers have commenced cutting Wheat. The quantity and quality seem to be better than we have had for several years. Sometime since, specimens of Wheats from various parts of the United States were sent to England, and submitted to the inspection of grain dealers and millers, and that from Southern Illinois was pronounced the best. In the Boston market it brings the highest price, mostly under St. Louis brands; none is equal to it, either for loaf bread or biscuit. Graham bread made from it in my own family, is as white as bolted spring wheat of the North, and it is lighter. Perhaps something is due to the skillful white hands which make it.

There have been great difficulties in getting a stand of corn. The proper time to plant is early in April, but this year it was so cold it came up badly. After that the ground was wet several weeks, and little planting was done till the middle of May. A few still are planting. For several weeks, up to the 10th inst., we had no rain; since then we have had good showers, and every thing is growing finely.

Strawberries are over with. The yield has been only about 15 bushels an acre. Raspberries are in their prime, and the Blackberry, growing on vines, is getting ripe. My Red Currants have been ripe some time. Generally it is understood that Currants will not grow here. I wanted to know the reason why, and in asking, planted, manured, mulched, and have abundance. Peach trees are well loaded, and the curculio are doing some good by thinning them out. It seems to me that this fruit promises to be uncommonly large. Some now are nearly three inches in diameter. They will begin to ripen in about a month. No other part of the United States can excel this in Peaches. I have a fine show of fruit on trees two years from the bud, and three years from the seed. There will be plenty of Apples. There are Pears; some kinds may do well, but as a general thing, it will not do for one to put his trust in princes or Pears. Only the wild Plum bears. We can raise no Cherry but the Richmond. It is a good plan to graft this Cherry by making smooth cuts and not loosening the bark on worthless stocks. Concord grapes are promising. They are half grown. It does me more good to look at them than to look at the rest of the fruit.

Gardens in general look well. The Cabbage seems have most enemies. A sprinkling of ashes, plaster, or even dry dirt, when the dew is on, is very useful. I think fresh ashes best. The worms and insects get the grit and lye in their teeth, and go elsewhere or die. I hope they die.

Foreign Intelligence.

Forcing Hyacinths in Pots.—The soil most suitable for the growth of the Hyacinth, is loam from rotted turf, that has lain in a heap in the full sun for twelve months, and been turned over twice. An equal quantity of fresh manure should be mixed with the turf at the time of laying up, and a bushel of soot sprinkled in at each turning. It is very distasteful to grubs and worms of all kinds; and unless the compost be free ot these and other noxious things, it is useless planting Hyacinths in it. If the compost is made as above, it will answer well; but, if the loam is of a strong nature, one-sixth of sharp sand intermixed will much improve it, and prevent its binding. Soils that form a close tenacious mass when pressed are unsuitable, and should, therefore, be avoided. If turfy loam is not to be had, soil of any moderately light description will do, adding an equal quantity of leaf mould if the soil is strong, or of hotbed manure if it is light. A liberal admixture of sand will improve the compost if it is deficient in that substance.

The compost, let it be what it may, should be chopped pretty fine with a spade, and passed through an inch riddle, which will take away any large sticks or stones, and yet leave the compost rough. Close sifting is not to be recommended, as it is apt to render the soil a mass of mud; besides, the roots do not then run freely through it.

Pots 6 inches in diameter, which, I believe, are the 32-size of the London potteries, but 25's of many provincial establishments, are the most suitable, though bulb-pots, now of fashion, 4 inches in diameter and and 8 inches deep, answer admirably. As the roots of the Hyacinth penetrate to the depth of a foot or more in the open garden, it is only reasonable to suppose that deep pots are preferable to those which are shallow. Six-inch pots, however, answer very well for single bulbs; but where three bulbs are placed in a pot the size should be proportionately larger. Three bulbs do very well in a seven or eight-inch pot, and in 3's Hyacinths are more effective than when grown singly. Pots 4½ inches in diameter, which are the 32's of some potteries, will answer perfectly for the smaller kinds of bulbs; in fact any size double the diameter of the bulb will do.

The compost being in a moderately dry condition, so that it will not bind when pressed in the hand, place a large crock over the hole in the pot, and on this half an inch of moss, cocoa-nut fibre, or pieces of charcoal, and on this again an inch of the rougher parts of the compost. We have now secured perfect drainage, and the pot must next be filled to the rim with the general compost. The bulb is cleared of offsets and loose scales, but only such as are decayed or injured, and, placing the bulb in the center of the pot, press it into the soil so that the apex may be level with the rim of the pot, or just a little above the surface. Press the soil gently around the bulb, leaving a half-inch cavity below the rim of the pot for watering, and the soil should slope from the apex of the bulb to the sides of the pot, so that the water will drain from, not to, the bulb. If three bulbs are inserted in a pot, they must be

equi-distant from each other, and treated like those potted singly.

After potting give a gentle watering, and having covered a level plot of ground on a north border or any other open and cool situation with coal ashes, so as to prevent worms entering the pots, stand these on it, and invert a 60-sized pot, or, what is better, a thumb-pot without a hole in it, over the crown of the bulb to keep it dry, as it is apt to rot when brought in contact with wet plunging materials. On the pots from 4 to 6 inches of coal ashes are placed, or old tan, or any thing of a similar nature. In this position they are to remain for a time, but how long is a difficult question to answer.

However, we will let them remain six weeks, if potted prior to the 1st of October, and only a month if potted after that date. The object of thus plunging is to let the roots be well established before the foliage starts into growth; which is an important point in their cultivation. Plunging is considered by many of vast importance. I have no hesitation in stating from my own experience that it is of no value whatever. For some years I was in the habit of plunging the bulbs that the pot might be filled with roots before the foliage had started; but I often found the foliage had started and was of a considerable length in a short time; and that, I think, was in a great measure due to the depth at which the bulbs were situated. I have found from 4 to 6 inches sufficient covering, for, when placed at a greater depth, the foliage quickly grows towards the light, and from the depth of soil through which it has to pass, becomes blanched, and it is hopeless to expect a fine spike on a short stem after the foliage is drawn to the length of from 3 to 6 inches. I have had these bulbs plunged in ashes and covered with a foot or more of leaves, and I found such treatment, though highly lauded by some writers and practitioners, far from conducive to success. It is necessary, however, to place the pots somewhere, and I have found that putting them on coal ashes in a cold frame immediately after potting, keeping the lights drawn down at all times except when heavy rains occur, is quite equal to plunging them; for the idea that any bulb will root sooner because the pot is covered with several inches of ashes is absurd, and the foliage will not start one moment sooner because it is exposed to the influences of the atmosphere. I three years in succession divided the bulbs as received, into three parts, and placed one lot in a cold frame plunged to the rim in coal ashes, and protected from wet by the lights; but at other times, except in frost, exposed to the air day and night. The second lot were buried to the depth of a foot in ashes; and the third plunged in a like manner to the depth of from 4 to 6 inches. This was done on the 14th of September, and on the 1st of November I found those in the frame with the apex large and closely clasped by the sword-like leaves, which were green and about 1½ inch long, the roots matting the pot. The bulbs under 6 inches of tan were in a similar condition, but not so well rooted as those from the frame, they were, however, in good condition; but those under 1 foot of ashes were grown to an extent of from 3 to 6 inches, and in many cases the apex was gone, no doubt from want of air and an excess of moisture. Both the first and third lot did well, but the first was the best; not according to my own judging, for my employers wanting to make a present of a dozen to a lady, and selecting from the 150 then in flower, chose them without exception from it. More than this, I invited a florist, who sees things in a different light from a gardener, to inspect them, and out of the thirty-eight left of those placed in the frame he selected nine as the best, whilst out of one hundred composing the other two lots there were only three equal to the nine, although the sorts and quality of the bulbs were the same in each case.

[*To be continued.*]

Rules for Rose Management.—Mr. Paul, in London *Gardener's Chronicle*, gives the following:

1. The best soil for Roses is a strong loam well enriched with decayed stable manure; if the soil is not of this nature, it should be improved by the addition of such as far as possible.

2. For light soils use cow-dung and poudrette instead of stable manure, merely mulching with the latter early in May.

3. Prune at two seasons; thin out the supernumerary shoots in November, and shorten those that are left in March.

4. Remember that the summer Roses should be thinned more freely, and shortened less than the autumnals.

5. Always cut back to a bud which has a tendency to grow outwards, rubbing out those buds which are directed inwards.

6. Destroy Aphides so soon as seen: by brushing them off or washing the shoots with tobacco-water, out of doors; and by fumigating with tobacco under glass.

7. Check mildew by dusting sulphur on the leaves while moist with rain or dew.

8. Water freely during the growing season, if very dry.

9. Never buy old Roses on the Manetti stock until you have proved that they will not flourish in your soil either on the Dog Rose, or on their own roots. The New Roses you *must* buy on the Manetti, or wait till they are raised by the slower process of budding or by cuttings.

10. Avoid plants that have been 'coddled," by raising and growing in heat during their early stages of existence. Thousands of Roses are annually sold which have the seeds of disease and early death previously sown by the forcing process. Such if they live do not grow vigorously, and often remain stationary or feeble for a length of time.

11. At whatever season Roses on their own roots are purchased, they should be planted in the open ground in spring and summer only (May, June, or July); once established they may remain permanently there.

12. Roses in pots should be repotted, removing a portion of the old soil early every autumn; they require closer pruning than the same sorts growing in the ground: they should be watered with weak liquid manure so soon as the young leaves expand, and until the flowering is over.

13. Roses intended for forcing should be brought into a state of rest in August or September, and be pruned shortly afterwards.

14. Roses under glass should be shaded when coming into bloom, but with a light shading only, such as Tiffany No. 1, or Scrim.

15. Most Tea-scented Roses thrive best under glass, and are worthy of this especial care. They may be grown in pots, in a cold pit or house, or be planted out in a house, standards or dwarfs, with or without heat.

16. Buy only such new Roses as are recommended from trustworthy sources. A new Rose that is not at the least equal to or different from all its predecessors, is not worth growing; and to grow such is almost as disappointing as to read a new book that is not worth reading.

17. When growing for exhibition, look to form and color, as well as to size; the day has gone by for mere bulk to triumph over symmetry of form, and variety and brilliancy of color, whether in pot Roses or others.

Preservation of Fruit.—At the Russian Court fruit is preserved by being packed in creosotized lime. The lime is slacked in water in which a little creosote has been dissolved, and is allowed to fall to powder. The bottom of a plain deal box is covered with it one inch high, and over it is a sheet of paper. Upon this the fruit, well selected and cleansed, is arranged; over this another sheet of paper, and on top of this another such stratum of prepared lime; in the corners a little finely-powdered charcoal is put. The whole box is then filled in the same manner, and the well fitting lid nailed down. Fruit kept in this manner will remain intact at least one year.

Horticultural Notices.

PENN'A. HORTICULTURAL SOCIETY.

MONTHLY DISPLAY & BUSINESS MEETING, JUNE 20.

The best Table Design, Basket of Cut Flowers, Hanging Basket, and specimen of Fuchsia, were all awarded to Donald McQueen, gardener to J. Longstreth. The Fuchsia was a very well grown specimen of the variety called "Little Bo Peep."

The best 12 Ornamental Foliage-plants, best 6 ditto, best 6 plants in 10-inch pots, and best ditto in 9-inch pots, were all to E. R. Hibbert, gardener to Fairman Rogers, Esq. The following are the premium plants:—Asplenium nidus, Tradescantia lineata, Croton pictum, Pandanus javanicus, Campylobytris agyroneura, Aspidistra angustifolia Adiantum cuneatum, Campylobotrys regalis, Aralia leptophylla, Sensitiva guinansis, Pteris argyrea, Dracœna terminalis, Maranta Warcewieszii, Yucca variegata, Coleus Verschaffeltii, Tradescantia discolor, Maranta capitata, M. bicolor, M. regalis, M. zebrina, M. Porteana, Aralia reticulata, Dracœna ferrœ, D. nobilis, Adiantum trapeziform, Tillandsia rosea.

Best collection of Gloxinias, to Gebhard Huster, gardener to E. Bouvier, Esq.

Special premiums were awarded to Thomas Meehan for a collection of 21 varieties of Carnations, and to Walter Bailey, gardener to President King, for a collection of Caladiums.

The Fruit Committee report the best quart of Cherries to A. L. Felten, and a special premium to the same for superior Hornet Raspberries, and to Jacob Huster, gardener to Geo. Harrison, Esq. for, a collection of fruit.

The Vegetable Committee awarded the first premium Potatoes, Peas, Beets, and collection of vegetables, all to A. L. Felten, and the best gardener's collection to Jacob Huster, gardener to Geo. Harrison, Esq.

N. Y. ROSE AND STRAWBERRY SHOW.

A correspondent sends us the following:

As Strawberries are now being exhibited in N. York city, I suppose you would like to know something about them. At the American Institute the "Agriculturist" ruled the roost in *size*. Triomphe de Gand followed close after the former's heels, with Russell's Seedling nearly neck to neck. The variety in number was great, and the tables looked noble and bewitchingly tempting.

The Roses were very fine. Mr. Burgess, who carried off the first prize for the best collection, exhibited two seedlings, one a Hybrid Perpetual of superb form, and having a much darker velvety hue than General Jaqueminot, and the other a Prairie, called "Abraham Lincoln." The color of the latter is deep rose, size large, and well formed, with an odor equal to any of the H. P.'s, and which will be found a desirable acquisition to the class of 'Prairies,' as well as a 'charmer' to the lover of Roses. We understood the name of the H. P. seedling Rose is G. S. Burgess, but unfortunately some wag, who attended the exhibition, removed the proper name and placed on it a 'substitute,' in the form of "Bob Demmins," which, by the way, was not recognized by Mr. Burgess till the close of the exhibition.

The Grapes Mr. Ellis exhibited were said, by Mr. Downing to be the best ever shown in New York. The Hamburg bunches weighed, some 4 lbs., 3½, and 2 lbs, each, berries very large and as black as jet. Last year the Society awarded him a gold medal, for a "seedling Muscat!" the first time it was brought to notice after fruiting for seven years. The character of the grape is now thoroughly tested, which warrants its reliability in being what was thought of it, and what it will prove in the hands of others when they get it. He will forward you a full description of it bye and by.

On the 15th of June, another Exhibition of Strawberries took place at the office of the *American Agriculturist*. On this occasion the most tempting dish was the Triomphe de Gand, and the largest berries were Russell's Seedling. This latter is a good Strawberry, it carries with it size, good flavor, productive enough, hardiness to withstand winters, and solidity sufficient to travel to market, and a comeliness on the face sufficient to command a ready sale. The 'Rippowan' is of the 'coxcomb' order, like the Agriculturist, and a person must be possessed of very sharp eyes to detect any specific difference in them. People who grow Strawberries for market should grow just that variety which they find succeed best on *their* soil and never mind the *best* of other parties. It will be a long time before Wilson and Russell will be beat out from the vicinity of New York. I have inclosed the following 'clip' from the N. Y. *Tribune*, (June 15th):

"The great Strawberry Show of the American Institute Horticultural Society, just closed at the rooms in the Cooper Union, was one of great interest to the public, where people might learn by examining and comparing the different varieties of fruit which they would prefer, beside the gratification of seeing such a fine collection together—among which are several of the newest and most approved sorts, and some that for size would greatly astonish some of those who have never seen Strawberries that weigh about 20 to the pound. Beside the Strawberries, there was a remarkable show of hot-house Grapes, from Fox Meadow Gardens, Westchester county, and a very beautiful collection of flowers, mostly Roses, from M. Burgess of Glen Cove. Prof. Nyce, of Cleveland, Ohio, was on hand with a good show of Apples and Grapes, kept by his new preserving process.

The following are awards of Prize Committee:

Best collection named Strawberries, over 25 varieties, one pint each, E Marshall, Po'keepsie, $50. Second do., W R Prince, Flushing, $25.

Best 2 quarts, for amateur (Agriculturist), W S Carpenter, Rye, $5.

Three heaviest berries (Rippowan), J W Faulkner, Stamford, Conn., $5.

Best quart Agriculturist, O Judd, Flushing, $3.

Best quart Austin, W. S. Carpenter; Brooklyn Scarlet, Bonte de St. Julien, and Deptford White, Thomas Cavanaugh, Brooklyn; Fillmore, Hovey and Hooker, W L. Ferris, Throgg's Neck; Green Prolific, J H Parsell, Rivington. N. J.; Hautbois, W R Prince; La Constante and McAvoy's Superior. F Brill, Newark, N. J.; Lady Finger, E Williams, Montclair, N. J.; Mead's Seedling, P B Mead; Russell, L M Vincent, Po'keepsie; Triomphe de Gand, G Henry, Hudson City, N. J.; Wilson, O J Tillson, New Paltz; any other variety equal to above (Rippowan), J W Faulkner, each $3.

Best collection cut Roses, W A Burgess, Glen Cove, $15.

Discretionary award to A G Burgess, East New-York, for seedling rose 'Pocahontas,' (renamed now Abraham Lincoln), and to Isaac Buchanan of New York City for collection of orchids.

Special awards were made to A Bridgeman, of New York, for Ornamental Foliaged-plants; to J Ellis, of Fox Meadow Gardens, for splendid show of hot-house Grapes, $30; and diploma to Prof. Nyce, of Cleveland, Ohio, for Apples and native Grapes, in a fine state of preservation from his fruit-houses.

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

THOMAS MEEHAN, Editor.
W. G. P. BRINCKLOE, Publisher. SEPTEMBER, 1865. VOL. VII.---NO. 9.

Hints for September.

FLOWER-GARDEN AND PLEASURE-GROUND.

Continue seed saving, remembering that the earliest flowers on a plant produce the best seeds. Biennials, such as Hollyhocks, Carnations, Snap Dragons, Pansies, and so on, should be sown during this month. They are quite hardy. A few branches or corn-stalks thrown over during winter, to keep the thaw from heaving them out of the ground, is all the protection they require. Hardy annuals, to flower early and fine next year, may be sown now. Tulips, Hyacinths, Snowdrops, and Crocus to be planted as soon as they can be procured. Light rich sandy soil to be employed. Gladiolus to be taken up as soon as the leaves fade, and carefully dried, labelled, and put away secure from frost. The same with Tuberoses, Tigridias, and so on towards the end of the month. Divide herbaceous plants. Plant evergreens, and decidous trees also for that matter, as soon as the fall rains have moistened the ground. If the leaves have not fallen cut them off with the immature shoots.

In planting trees use rich soil. Better good soil than large specimens. Large trees may be transplanted at the end of the month. All the roots which extend 10 or 12 feet from the trunk are of more importance than a ball of earth. Trees usually considered half hardy are all best transplanted in spring.

Early this month prepare by striking cuttings for the flower-beds next season. 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 shoot 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 a rule or straight edge, and then cut down a face into the cut, 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.

Many kinds of bedding-plants of succulent or subfleshy growth, can be taken up from the flower-beds on the approach of frost, and cut in, say one-half, and packed thickly in boxes of soil, and kept in a rather dry and cool cellar through the winter. Such fine plants make a much better show in the beds the next year than plants of the present season's striking. A cellar is one of the most useful appendages to a garden. Were we to have only *one* choice, we should prefer a cellar to a greenhouse for its general usefulness.

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, etc., 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 the 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.

VEGETABLE GARDEN.

Earth up Celery as it grows, not letting the soil get to the heart, or it will rot. Soap-suds, or other manure water, helps it wonderfully at this season. Dig and house Potatoes. Too large a pile will heat, and any way they keep best when cool, and with some soil mixed through the heap. Sow Red-top Turnip for main crop: rich soil is essential. Transplant Endive: this also likes a rich loamy soil. It does not do well on sandy soil. Sow Radish and Lettuce for fall crops. Sow Cauliflower and Early York Cabbage about the middle of the month. Onions sown in fall make fine early bulbs for next year. Sow Prickly Spinage in very rich soil, for use through the winter and early spring.

FRUIT GARDEN.

A great revolution has occurred in selecting fruit trees for planting. Bushy plants are now sought for. The shade which the side branches make is considered beneficial to the tree. As to the beneficial effects of continual digging about trees, which we oppose, all cultivators are not unanimous; but most of them now abandon it after some years: the only difference of opinion being how many years after planting shall this style of cultivating continue? With very low branched trees there is this advantage, that the plow or the spade cannot approach very near the trunk. Rich soil is however essential to good growth and good crops. This is the essence of "good cultivation."

In preparing for planting trees, the soil should be stirred up at least two feet in depth. Of course, the trees should be planted in the holes only so deep as they stood in the ground before, rather higher, if any thing, as the soil will settle. Good common soil may be filled in the holes if the natural soil is very bad; but any thing applied as manure may be stirred in the surface-soil after the trees are planted. Some object to making deep holes for planting trees, as if the soil is stiff they become wells, collecting water from surrounding soil, and rotting the roots. It is best to underdrain such soils before planting. If this cannot be done, it is best to plant such ground in the spring. The water objection is a fatal one for fall planting in such ground.

Trees that have long stems exposed to hot suns, or drying winds, become what gardeners call 'hide-bound.' That is, the old bark becomes indurated, —cannot expand, and the tree suffers much in consequence. Such an evil is usually indicated by grey lichens which feed on the decaying bark. In these cases a washing of weak lye or of lime water is very useful; indeed, where the bark is healthy, it is beneficial thus to wash the trees, as many eggs of insects are thereby destroyed.

Whitewash is frequently resorted to by farmers; but the great objection is its unsightly appearance, —the result is otherwise good. The great opposition to washes formerly was, that the pores of the bark were closed by them,—this was on the supposition that the bark was alive; but the external bark of most trees has been dead years before the time of

application; and 'the breathing,' if so the operations of the pores can be called, is through the crevices formed in the old bark by the expansion of the growing tree by which the living bark below has a chance of contact with the air. No matter what kind of coating was applied to the bark of a tree, it will soon crack sufficiently by the expansion of the trunk to permit all the 'breathing' necessary.

Strawberry-beds may now be made to advantage. Choose thrifty young runners, that have plenty of good white fibers, setting them no deeper in the soil than plants were before removal. The best runners come from young plants of the previous year,—old plants usually make feeble runners.

HOT AND GREENHOUSE.

In the Hothouse, the Æschyanthus will soon be the chief ornament of this division. Their number has increased so that they have become quite a feature. If the pots seem full of roots, they may still have another shift. They prefer very fibrous peat; or, if that cannot be had, turfy loam, mixed with a portion of coarse moss. They will, however, do pretty well in small pots. Achimines and Gloxinias, as they go out of flower, should be kept dryer and cooler. Look well after a good stock of Pentas, Cestrum and Habrothamnus; they will go far towards keeping up the interest of the department in winter. Justicias and Acanthaceous plants generally will probably require another shift if fine specimens are desired. The atmosphere, if the house be light, can scarcely be too moist for them. Plumbago rosea is one of the most valuable stove plants we know for winter flowering; it requires a strong heat. Clerodendrons, as they go out of flower, should be kept in a very airy situation, and rather dry, preparatory to being cut down and treated like a Pelargonium for another year. Many Begonias will be past their best flowering stage; very little watering serves them; they are very liable to damp off by incaution in this respect. It is difficult to lay down rules for Orchideæ, so much depending on the circumstances under which they are grown. Those which have finished their growth,—as many Dendrobiums, Oncidiums, Catasetums, etc., whose flowers appear just before new growth,—should have their supplies of moisture gradually lessened. The temperature, also, is better gradually lowered a few degrees, and they should be allowed more light than usual. The period when they are about completing their growth is the most critical, as any check at this time spoils the prospect of much blossom for next season. Those which flower from the young growth, as Catleya, Lælia, Broughtonia, etc., will require their moisture and heat rather increased than otherwise till after their flowering. Vandas, Angræcums, Saccolabiums, and other strong-rooting ærial kinds, will require constant humidity, until it is evident, from the points of their roots, that they desire to stop growing. We are often asked, "how often orchids require to be syringed?" If the situation in which they are growing be favorable,—that is, retains in its atmosphere a regular humidity,—they will require very little attention; in many cases not requiring the syringe once a week. Where this cannot be effected, the syringe must be oftener applied. As a rule, I think no better one could be offerred, than to syringe orchids just so much as will barely keep moss attached to their blocks and baskets green and growing. The real terrestrial orchids will require no moisture at all after they have completed their growths, until they show signs of pushing again. Care against checks in temperature and humidity, is one of the secrets of successful orchid growing. Those which are at rest do well in a temperature of 60° at the lowest. Those which are growing well should be kept at about 80°.

In the Greenhouse, repairing and thorough cleansing must not be delayed. Painters say this is the most advantageous month to paint wood-work.

Whenever the night temperature falls to 40°, any tender plants in pots should be housed, without waiting for the "first week in October." Things nearly hardy, as Azalea, Rhododendrons, Oranges, etc., do best "out to the last."

Any desirable plant for forcing, that may be growing in the open border, if potted early in the month, will do very well for that purpose. Weigelia rosea does excellently this way; as also does Jasminum nudiflorum, Forsythia viridissima, many Spiræas and Persian Lilacs.

Roses, and other things intended to be forced early, should have as much air and be kept as dry as possible without injury.

Hyacinths and other bulbs should also be potted as soon in the month as they are obtained; the former are best planted an inch deep. The earlier bulbs are potted the finer they flower,—you may get *catalogues* of any number of kinds or colors at at the *auction marts*. If you get ten per cent. as represented, when they flower, you will be favored.

Mignonette, Rhodanthe Manglesii, and similar ornamental annuals, essential for winter blooming in well-kept houses, should be sown at once. Many things for next season's flowering, either, must not be forgotten. The Pansy, Calceolaria, and Cineraria

are in this class. Plants of these that have been kept over the summer, will require a re-division, and kept in a close frame a few days afterwards, till they get re-established.

Propagation of all things will still require constant attention. It should always be an aim to possess one duplicate plant, as a provision against accidents. In many cases, young plants are preferable to old ones; so that the old ones may be destroyed when these are obtained.

Communications.

PLANTING SEEDLING EVERGREENS IN SUMMER.

BY ROBERT DOUGLASS, WAUKEGAN, ILLS.

I transplanted 10,000 Norway Spruce Seedlings, 2 years old, early in August last. The loss from moving was almost imperceptible, apparently not exceeding 1 per cent. On examining them early in October, I found they had formed a mass of new roots. I then planted a quantity of different kinds, but found it too late in the season, as they did not root before winter set in. I covered a part of the Norways when winter approached with leaves, and part with slough hay. They wintered finely, and have made twice the growth made by seedlings from the same bed, that were transplanted last April. They have all matured this summer's growth, and I think the experiment complete. The loss in either case amounts to a small fraction; but the growth is decidedly in favor of summer planting.

I have continued my experiments this season, by transplanting, June 14th, fifty of last years Norway Spruce seedlings; June 19th, five hundred same; June 26th, ten thousand same, and several thousand within the last few days, (July 1–3d). This morning, on examining the lot planted June 14th, I find new roots already one inch in length, and every one living and doing as well as could be desired. The lot of June 24th had not finished their growth when planted, but were just beginning to show the terminal bud: they have hardened up and stand quite erect.

We planted the above in beds 4 feet wide, with 2 feet allies between; if the ground is dry we water it, cover the surface with half-inch of swamp muck, and plant with a dibble 6 inches apart, and 2 inches apart in the rows; water well when planted; no shade, but in a hot dry time, a little fresh grass thrown lightly over them, as we did on the ten thousand planted last August, would be advisable.

When I commenced the experiment last summer, I would not have dared to plant them with a dibble at that season of the year, fearing it would bruise the delicate roots, had it not been for an article I saw in the *Gardener's Monthly*, recommending the planting of Evergreens at that season, and pounding the ground over the roots with a rammer.

I put on the mulch to keep the moisture in the ground till the roots take a new start, which I am satisfied is within a very few days, at this hot season of the year.

I shall transplant at intervals till the middle of August, but not later in the season.

[We regard this communication of Mr. Douglass' as one of the most important we have ever had the pleasure of laying before our readers. It was at one time supposed that Evergreens could not be raised here, and that importation was a necessity. Several of us, among others Mr. Douglass, have learned that they can be as successfully and cheaply raised here as in Europe, and many thousand of dollars will be saved to the country. Now we have the important announcement that we can transplant them at almost any time, which will be a great boon to those who have heretofore supposed that what was to be done had to be finished in a hurry during a few weeks in spring or not at all. With root-grafting in winter, and summer planting, the American nurseryman can find regular employment for his hands all the year round.

Mr. Douglass gives the middle of August as his latest time for planting. In the middle of September we had several thousand Pinus rigida and Scotch Pine, raised from seed sown 18 months previous, and our success was equal to that of Mr. D., not one of the Scotch Pine failed, and very few of the Pitch Pine, which were very much crowded in the seed beds. During the coming September we shall risk out thousands of seedlings of last years raising. Our plan is to put the roots in buckets of water as they are lifted, and they are taken from the water immediately as set in.

It is a satisfaction to us to have intelligent men like Mr. Douglass bearing testimony to the value of hints they derive from our magazine, and still more agreeable when to this they add new and valuable hints of their own, as in the present instance, that must benefit many equally with themselves.

Evergreen raising and transplanting is so new a theme, that we shall be glad to have the continued experience of others who may experiment.—ED.]

SPIRAL ARRANGEMENT OF LEAVES.

BY DR. G. ENGELMANN, ST. LOUIS, MO.

[Dr. Engelmann is engaged specially on the study of Coniferæ; and in some correspondence with him recently, we incidentally called his attention to the fact, that the spiral arrangement in Pine cones produced a more acute angle in the right hand course of spiral lines, than in the left hand courses. What the Doctor says in reference to the whole subject of spiral growth may not be entirely new to many of our readers; but it will be to many, and will be interesting at least to all, and we have, therefore taken the liberty of inserting the extract in this shape in our journal.—ED.].

"You make a remark about the spiral lines on Pine cones. It may be of interest if I say a few words about this arrangement of scales, (in other words, leaves), which, first noticed, or rather investigated, 39 or 40 years ago, in Germany, and was followed up there and studied, and was found to pervade the whole vegetable kingdom, and the arrangement of all leaves or leaf-like organs in plants, and is now a well understood branch of botanical science, under the name of *Phyllotaxis*.

And there is found the same systematic arrangement in all organs which follow the leaves, such as buds: thus, the buds of a Potato (take a long cylindric one, to be better able to observe), are regularly placed like the scales of Pine cones; or the flowers and seeds of a Sunflower, or similar plants, are arranged on the disk in an analogous order; or the tubercles of a Mamillaria, etc.

Now take a large Pine cone, (for example, one of the Norway Spruce is peculiarly adapted), and there will be found some spiral lines in one, others in the opposite direction. Mark one of the scales 1, and mark one of the spirals over the scales with ink or with some paint, and you will soon find that almost always 8 such parallel spirals run one way, and 5 the other; flatter, less steep, one; if you mark the second scale in the steeper spirals (those of which 8 run parallel around the cone) 1 plus 8 =9, and the third 9 plus 8=17, the fourth 25, the sixth 33, the seventh 41, and so on; then the second in the flatter spiral mark 1 plus 5=6, the third 6 plus 5=11, the fourth 16, the fifth 21, and so on; if then continued from that scale marked 9, to go on along the flatter spiral and mark the next scale 9 plus 5=14, the following one 14 plus 5=19, 24, 29, etc.; or, in the other direction, going from the scale marked 6 in the steeper spiral, to the scale, and mark it 6 plus 8=14, the next 22, 30, 38, etc. If continued that way, all the scales of the cone will soon be numbered, (all in that part that is regular and even) and can follow from 1 to 2, 3, etc., which will give the original plan of succession in these scales.

In cones, when the scales are crowded, this succession can not be verified by the scales, but in a Potato it can, and still better in a vigorous shoot of a tree: Apple, Populus, etc. In these latter the sixth leaf stands over the first, after encircling the stem *twice*. This arrangement is more simple. In the Spruce, only the twenty-second scale stands right above the first, and to get there, from the first to the second, third, etc., in regular succession, enumerate the cone eight times. In smaller cones, that of *A. canadensis*, for example, the ninth usually stands above the first, and in *Larix Americana* the sixth over the first; in the latter there are only two spirals one way and three the other!

Now, in the larger cones, such as *Abies excelsa* (Norway Spruce), there are discovered more spirals, steeper and flatter than those mentioned before, but not as distinct; 13 in the direction of the fives, steeper than the 8, and 3 in the direction of the latter, flatter than the fives; and this can be followed up until getting to complete and mathematical problems!

Any Rosebud gives a pretty example of the 2–5 arrangement, as it is called. Larix Americana would thus be also 2–5, Abies canadensis 3–8, A. excelsa 8–21, etc., and others 5–13; the most complete that I have seen is Pinus tæda with 13–34, and P. Lambertiana, with 21–55 arrangement, *i. e.* that it takes 55 scales to get round the cone to the perpendicular line of the beginning, and that the fiftysixth, over the first, begins a new circuit; and that, to get there from the first in the order of succession from 1 to 2, 3, etc., it takes 21 circuits around the cone.

But I was speaking of the calyx of the Rose; the lowest, 1, has on both sides leafy appendages; the second also; the third only one on one side; the fourth and fifth none: they are the innermost, they follow in the direction given in "Gray's Lessons,' page 71."

THE CROWN OF THORNS.

BY B. T.

In your *Monthly* for July, is a paragraph from the *Gardener's Chronicle*, in which I see it discussed as to what plant is the one furnishing the Crown of Thorns, mentioned in the account of Jesus' crucifixion. That it is not the *Paliurus aculeatus*, I satisfied myself when travelling through Palestine, though it is known as the Christ's Thorn through-

out the Holy Land, where it is very abundant, forming a low straggling bush, growing in sandy and waste ground. The Paliurus would make, as the writer in the *Chronicle* says, a very pretty wreath; but, although the spines are troublesome, they are weak and slender, and not at all calculated to inflict the extreme agony we associate with all the particulars of the crucifixion. Moreover, it is quite evident from the paintings of the suffering of Christ by the old masters, that the Paliurus is not the plant they represent, or imagine to be the one employed. Their plant very much resembles the *Gleditschia triacanthos*, our Honey Locust, as every American who has seen any of these old pictures will readily recognize. But, as the correspondent of the *Chronicle* properly remarks, the Gleditschia is an American or Chinese plant, and if known in Palestine when these old painters flourished, must have been very rare, and not common enough at that time, as it is there now, to derive the vulgar name of Spina Christa.

But this explanation is unnecessary, for I met occasionally along the Mediterranean, and no doubt it was at one time, or may be yet, though I do not remember meeting it, common about the places mentioned in the Bible particularly, a plant called the *Jujube*, which bears a pleasant fruit, and has strong spines, very much as in our Honey Locust, and which has very long pliant branches, and could be very well indeed woven into a crown of thorns. This plant is called *Zizyphus communis* or *vulgaris* by botanists, I am not, just now, quite sure which, The leaves are somewhat like our American Tea (*Ceanothus*), but smaller, and the strong, spiny shoots of dark purplish-brown color. The tree usually grows 20 or 30 feet high, something resembling our Apple-trees, but of a lighter and less twiggy habit.

Certainly the crown of thorns, as represented by the old painters, is more like this *Zizyphus* than like the Honey Locust, and is not the Paliurus; and, as the *Paliurus*, though generally called in Palestine Christ's thorn, will not make a particularly painful wreath, I concluded this Zizyphus was the real plant from which the Crown of Thorns was made.

Can you tell me whether this plant has ever been introduced into the United States? It may not prove hardy in the North, but is at least worth trial from its historic associations.

[There was a large quantity of seeds distributed by the Patent Office years ago, under the name of Jujube; we suppose some of them must have germinated somewhere. A few years ago there was, and may be yet, a plant in the Bartram Gardens, and there is now quite a nice tree on the beautiful grounds of Thos. W. Evans, Esq., of Germantown. Zizyphus vulgaris is its proper name. It is quite hardy in Philadelphia, judging from this tree.—ED.]

A CURCULIO REMEDY.

BY PROF. S. S. RATHVON, LANCASTER, PA.

Communicated to D. R. King, Esq., President of Pennsylvania Horticutural Society.

Col. James Myers, a wealthy and intelligent Ironmaster, of Columbia, Lancaster County, Pa., who owns a beautiful country seat, and takes considerable interest in Horticulture and Floriculture, informs me that he has tried the following remedy for the destruction of the *Curculio*, and from actual experience has found it so far effectual as to secure him a crop of Plums, whenever and wherever he applied it with efficiency,—that is, where he has given it the necessary attention.

Mr. Myers takes short, wide-mouthed, glass bottles, holding about an ounce each, and sufficiently stout to prevent them from being broken by the lashings of the branches from heavy winds. These he suspends by wires, or good twine strings, in all the main forks of the trees, sometimes having as many as a dozen or more on a single tree. These bottles he half, or three-quarters, fills with sweetened water; and the number of insects destroyed in these traps during a single favorable day, is astonishing. It is true, that in addition to the Curculio, he also destroys many other species, some of which may be insect friends; but we can reconcile ourselves to this, provided we are *sure* that we destroy our enemies.

This is an *old* English or German remedy, applied to the destruction of the 'Bee-moth,' and other kindred species of insects; but so far as its application relates to the Curculio, it may be *new* to some of your members. These bottles should be attended to every morning and evening, and the insects taken out, adding new liquid at such times as they require it, keeping them always at least half full. In addition I would suggest that if any perfume could be employed to make the "sweetened water" more attractive to the insects, it ought to be tried; and perhaps if any ingredient could be infused that would poison them, without diminishing its attractive qualities, it would be all the better, unless danger therefrom might accrue to the birds.

I do know that a large number of species of *Coleoptera*,—among which are many species of *Curculionidæ*,—resort to flowering plants, and feed upon nectar, during the 'pairing' season, and if it were thus supplied artificially, there is no doubt but they would choose it where it existed in the greatest abundance, and was easiest obtained.

BRINCKLE'S ORANGE RASPBERRY.

BY SWIFT.

In our headlong haste after novelties, it would be well to pause, and consider whether some of the older varieties of fruit are not better worth cultivating than some of the newer kinds. It is often the case that some good variety of fruit is discarded, simply because we have failed to discover its real worth. I wanted to purchase a few canes of Brincklé's Orange Raspberry last spring, but found a difficulty in procuring them. I was told by one party, that there were so many better varieties of that color, that he had given up growing it. He recommended "Col. Wilder" Raspberry: Col. Wilder may be a better fruit, it certainly is a trifle hardier; but the Orange is better flavored, a larger berry, and as to color there is no comparison between them,—the one being a dirty whitish-yellow, and the other a deep golden color. I must candidly confess that I am partial to Brincklé's Orange: the splendid color of the berries when ripe, hanging, as they do, on the canes, like so many granular "nuggets of gold," give it a value for *table use* over every other variety grown.

It would be well to grow this variety, were it for no other reason than to keep one in mind of the *flavor* of real Raspberries that were in circulation previous to the age of mere 'productive' varieties.

I am inclined to think one reason why Brincklé's Orange is not more generally cultivated, is because it is not hardy. The best of them are not hardy. The canes may live through one winter, but *they will not bear so well as those that are protected.*

The fruit of Brincklé's Orange is of good size,—not quite so large as the Gooseberries which the old lady knew some ons had been stealing, because she *counted* them in the market place, and they measured just *fourteen* to the quart,—and under good management a very free bearer. It requires a stiff clayey soil, partially shaded, and inclined to moisture. When once planted, the ground ought not to be dug afterwards; but when the berries are beginning to swell, cover the ground, annually, two or three inches deep with compost of any of the following materials:—Mud taken from the bottom of some pond, which has been washed by the rains from some neighboring woodland; or, two years old hotbed manure, mixed with one-third sand,—if none of these materials are to be had, take coal ashes and spread over the ground, and you will have both plenty of fruit and an abundance of suckers.

Another reason why many people do not succeed in raising, not only Raspberries, but small fruits generally, is attributable to the common mistake of planting in the same ground year after year. "We used to get good Raspberries and plenty of them from that bed," is a shallow pretext too often advanced for silencing all objections to putting them in the same ground again.

People sometimes get the carpenter to put up a trellis, two feet, perhaps, in height from the ground, the posts of which are strong enough to build the frame-work of a dwelling-house; and the cross-pieces inch and a quarter boards, ripped into lengths three inches wide, planed, painted, and, probably, with the intention of growing Raspberries during one's entire life in the same place. This is a mistake. Raspberries require a change of soil occasionally, and where they will do best is the place to plant them.

NYCE'S PLAN OF PRESERVING FRUITS.

BY P. C., CLEVELAND, OHIO.

Observing that you have frequently called the attention of your readers to this new method of preserving fruits, I think, however, no complete account has ever yet been published by you. The enclosed was prepared by a friend for one of our daily papers. If you think the matter of sufficient importance to a majority of your readers, I should be pleased to see you insert it:

"Late in October or early in November of last year, we visited the Fruit House of Messrs. Nyce, Shirk & Co., on Kinsman Street, while the Proprietors were putting in their fruit. We at that time gave a quite full description of the house, and detailed the *modus operandi* of preserving the various fruits, apples, grapes, pears, etc., which were put in it. At the kind invitation of Prof. Nyce, we went through the establishment a day or two since, and we are prepared to report most favorably on the manner in which the fruit has been kept.

But before we speak particularly of this, we will lay before your readers some account of the building, and the theory on which this scientific process of preserving fruit is based, believing; as we do, that it is a matter of great curiosity and general interest, now that the institution is a success.

This house consists of two apartments, one above the other. The upper one contains ice, put in every winter, in depth usually five or six feet. This is separated from the fruit-room below it by a floor of galvanized iron, the sheets of which are closely rivited and soldered, so as to be perfectly water tight. The walls are made of two castings of sheet iron, three and a half feet apart. The edges of these sheets are painted and closely nailed to upright studding, the intervening space between being filled with chaff, sawdust, or short shavings, or other non-conducting substances. The floor of the fruit room is also made of galvanized iron. Below this are placed shavings, three feet thick, on a coating of tar and pitch, spread one inch thick upon the ground to prevent the entrance of moisture. One or more wind-wheels are placed above the roof, geared to fans in the fruit-rooms. On the floor of the fruit-room, spread formerly, in its dry state, the chloride of calcium, a substance which has great power of absorbing moisture; but now the waste bittern, from salt works (absolutely costless), after being dried, is found to be equally as efficient as the former chloride.

The elements of a complete preserving atmosphere are, coldness, dryness, purity, equality of temperature, at all times, and in every part, absence of light, and if possible, the exclusion of the great agent of decomposition, the oxygen of the air. This plan secures all these elements in perfection. The thermometer shows a uniform temperature of 34° in all parts of the room, and is found not to vary a single degree from 34°, even from April until October.

Dryness is its leading patentable feature. Vapor is constantly given off from different kinds of fruit, amounting usually to at least half gallon of water from one hundred bushels per week. This vapor is taken up by the absorbent, which is spread over the floor of the fruit room. It is made to run out in tubes to the outside, once in about every month. It is then dried in large pans, of sheet iron, and returned to the house in the dried state as before. The same substance is thus used twenty or thirty times. The air, in a room so completely confined, after the fruit is chilled down to 34°, becomes very still. The fans are used to give circulation to the air, and bring the moisture arising from the fruit in contact with the absorbent, to be taken up by it, although it is found, on trial, that they are not at all indispensable. The air is pure, because every source of impurity is excluded.

In the gradual ripening of fruit, hydrogen and carbon are constantly given off; the former unites with the oxygen of the air, and forms water; the latter carbonic acid.

This process, in any confined vessel filled with fruit, consumes all the oxygen, especially if the fruit be ripe, and the air warm, in about forty-eight hours. The rooms of this house are gas tight, and when filled with fruit, if closed up for two days, a candle goes out in them instantly.

The fruit is then surrounded by an atmosphere composed of the nitrogen of the air and carbonic acid. The former is destitute of all active properties, good or bad; the latter is not sufficiently acid, unless under heavy pressure, to produce any action on fruits immersed in it. Hydrogen and carbon then cease to be evolved from the fruit, as there is now no agent to unite with them, in the same way that they cease to be evolved from a burning candle, when the air is removed. Decomposition ceases in both cases, and for the same reason. The principle is thus stated by Liebig:—"Decay is much retarded in the absence of moisture, and by the substance being surrounded with an atmosphere of carbonic acid, which prevents the air from coming in contact with decaying matter."

All fruit should be in the house when tree-ripe; that is, as soon as it has received all the virtue the tree or vine can impart to it. Liebig says:—"Rub an unripe, or green apple or pear on a grater to a pulp; wash this with cold water on a fine seive,—the turbid liquid which passes through, deposits a fine flour of starch, of which not even atrace can be detected in the ripe fruit. This after-ripening as it is called, is purely a chemical process. It is the starch being transformed into sugar; the more starch the unripe fruit contains, the sweeter does it become when ripe."

Although, after the saccharine change, putrefaction may go on slowly at 34°, yet starch is much more slowly changed into sugar at that temperature. In strict accordance with this principle, it is found that the most tender fruits, if put in immediately when made, keep better than the more hardy sorts, if not put in till fully ripe. One bushel of apples if fully ripe, throws off more hydrogen, and forms more water than three bushels if put in in the proper season.

It is believed and claimed by the patentee and by all the scientific gentlemen who have examined the subject that there are but two known modes, for practical use, of drying air; and, as we have already stated, dryness is the leading patentable feature of this house, and the *sine qui non* of preserving fruit in full health and flavor. One mode consists in throwing the air upon ice, or an ice-cold surface; the other, in forcing it upon absorbents. The principal experiments hitherto have concerned the former method, which is a very imperfect and unsatisfactory one: for by it the air gives up only so much vapor as is in excess of its capacity at 32°; it is still as wet as it can be at this ice-cold temperature.

The absorbents used in Nyce's fruit-rooms condense vapor freely from the driest air, even when chilled down to zero, or below. His fruit houses, without absorbents, presents one of the best arrangements to dry air by the first method, as it presents the largest ice-cold surface on its upper part, the place to which the vapor from the fruit, always somewhat heated by the chemical change that produces it, immediately ascends. But experience has clearly shown in this house, that present results could not be reached by this method alone, and it would seem, and it is positively claimed, that the plan adopted in the Kinsman street fruit house is the only one which will at once insure a dryness sufficiently uniform and perfect, and a constantly equable and adequate degree of coldness.

But the people are impatient of the theories of the matter, and crave results. They wish to know, first of all, how the fruit has kept; in what condition it now is, and if the experiment is a success; and if the institution 'pays.'

To these inquiries, very hopeful and satisfactory answers can be given. Not more than three or four apples in a hundred, on an average, have decayed thus far in these rooms. And there is this peculiarity in the decay of the fruit. When a decayed apple is found, it is universally found totally decayed, and surrounded by fruit not at all tainted by its rot, proving that the defect was already in the apple at the time it was put into the house. The patentee is positive that, if an apple has a sound skin at the time it is housed, he can preserve it in full health and flavor, by means of the agents, dryness and coldness, although it very rarely occurs that fruit, apparently sound, has an internal power of decay, over which science has as yet attained no control. But if an apple can be plucked from the tree at the time it has sucked all the virtue which it can draw therefrom, and has a sound skin, Prof. Nyce will put the same in his rooms, and successfully defy it to decay. And this is the great problem now to be solved, to wit: the determination of the precise time when fruit should be removed from the orchard to the preserving rooms. Long years of observation and study of the habits of the various fruits must go to the perfection of that man's insight and intuition, so to speak, who shall become master of this difficult science.

The proprietors of this house were unfortunate last fall in not getting in many varieties of apples in their season. Such varieties show the effect of that delay, whereas the most tender fruit, like the Belmont and Rambo, which was put in in season, have been preserved most remarkably, with all their virtue in them.

The fixation of the flavor of the fruits, apples, grapes, etc., is wonderful, and seems to realize the tales of magic. Here we have tender varieties of fall apples, some of them long since out of the market, which are as fragrant, firm, crisp, and juicy as ever, as if enchantment had been struck through them, as indeed it has been. Here are grapes, fresh, plump, the bloom on them yet, their stems still green, and they full of wine. Lemons, put in six or seven weeks ago, are as fresh, and their stems as green, as on the morning of their introduction into the house.

The most remarkable thing connected with the rooms, is their absolute dryness. Not a particle of moisture is to be seen anywhere on the fruit or in the apartments. Fruits rolled in the hand sound crisp, and rustle like the leaves in autumn. Apples which, in the bins, are as dry as powder, float in their perspiration in two minutes time, if taken into the air. The dryness is positively absolute, and Prof. Nyce may well congratulate himself on achieving this long sought-for result.

The atmosphere in the preserving rooms is chilled down to 34°, and kept there in the warmest weather. Scientific gentlemen who are disposed to question this, if any such there may be here, are at liberty, and are specially invited, to investigate the matter for themselves. Prof. N. has succeeded in producing a complete preserving atmosphere, by securing the presence of the elements thereto necessary, namely, coldness, dryness, purity, equality of temperature at all times and in all parts of the house, and by excluding the light and the oxygen of the air. Nothing is now wanting to the perfec- of this fruit-preserving process, except a judgment infallible in discovering the exact proper time for the removal of the fruit from the tree to the rooms. Time will supply the elements of this knowledge.

THE MODERN STYLE OF PLANTING SHRUBBERY.

BY WALTER ELDER, PHILADELPHIA.

The modern is the most admirable and ennobling mode of embellishing large grounds with flowering shrubbery, namely, massing them in groups of va-

rious dimensions and forms. All sharp points are avoided; even at the junction of two roads or paths, sharp, projecting points are rounded and made blunt, if a group of shrubbery is to be planted there. Where there is a fine view in the distance to be seen from the mansion, it would not do to plant trees to hide it, but the lawn can be ornamented with groups of shrubbery.

Shrubs set out singly would be like lost sheep; but when massed into groups they look noble, and if every third group is a *Rosary* the effect is the more beautiful and grand. The Hybrid Perpetual Roses need no more care than shrubs, and they cost no more money.

In planting the groups, the tallest are set in the center, and the smallest at the outer edges; they are set so far apart that each plant will grow to its natural size, and show its blooms to the best advantage; and by a proper system of yearly pruning, each plant is kept within the bounds allotted for it. Weeds are kept from amongst them by the frequent use of hoe and rake. If the soil is good, manure is never needed, as the leaves of the shrubs keep the soil rich. The Rosaries should get a coat of rotted manure in the fall, and raked in in the spring, but digging should not be practiced among the shrubbery, as they have so many surface roots, the hoe goes deep enough.

A fine effect is often produced by planting herbaceous perennials alternately with the dwarf shrubs on the outer edges. The following kinds are suitable for the purpose, and will keep up a succession of bloom during the growing season, with little care:—Dicentra, Pæonia, Phlox, Aconitum, Delphinium, Lychnis, Lythrum, Veronica, Chrysanthemum, Dahlia, Gladiolus, Japan Lily, and all the other large Lilies.

Another commendable mode in growing shrubbery is on the sides of long straight walks, alternated with ever-blooming Roses, and the grass kept short around them,—the effect is most pleasing. But it takes a very decided man to have straight walks now-a-days, as nearly all Landscape Gardeners insist upon curves and crooks; and there are some who are so decided where they think a better effect is to be obtained. Shrubbery on the side of crooked paths would be out of place, as there is no perspective to relieve the eye, and makes every thing look confused and in heaps. Straight walks, however, are preferable only where they can be of moderate length —answer for small places, where it is desired to make a place larger than it really is, or to hide some unsightly object.

Hedges of flowering shrubbery on the outlines of large grounds have pleasing effect; but rows or groups produce confusion on small grounds or suburban gardens,—single specimens are preferable.

Many persons complain that so few shrubs bloom during the summer months. This can only be for want of proper selection. The following are desirable kinds, and bloom between the first of June and the first of November: Berberis vulgaris, Budleya Lindleyana, Calycanthus floridus, Deutzia scabra, Ligustrum vulgare and sempervirens, Lonicera Ledebourii, all varieties of Hibiscus or Altheas, all varieties of Philadelphus, Potentilla fruticosa, Robinia hispida, Spiræas Billardii, bella, Californica, callosa, exima and Nobleana, Weigelia rosea and amabilis.

The following are loaded with showy fruits during autumn: Mountain Ash, White Snowberry, Red Snowberry, Euonymus europæus, Evergreen Hawthorn, etc. The following vines do well when grown well upon short stakes as shrubs: all kinds Honeysuckles, Clematis flammula, the hardy Yellow Jasmine, Bignonia grandiflora, etc. These vines when set in groups are planted further apart than standard shrubs,—they make a fine show.

FAMILIAR BIRDS.

BY J. P. NORRIS.

VI.—THE CHIPPING SPARROW.

This charming little bird is almost an universal favorite. Even the most inveterate haters of birds can find no offence with which to charge him. They are, therefore, obliged to keep quiet, much to their chagrin. The Song Sparrow is charged with eating Strawberries; the Cat-Bird with stealing Cherries, the Robin for the same offence, and so on through the long list of harmless, beneficial, insectivorous birds; but the Chipping Sparrow has yet to be charged with the first theft, real or imaginary.

There is something so remarkable in a man hating birds, that we are at a loss how to account for it. Even if a man has no poetry in his nature, and therefore cannot appreciate what light, aerial creatures birds are, we should think that his common sense would lead him to protect them; yet it seems some persons are just so blind to their own interest.

The Chipping Sparrow (*Spizella socialis*) is one of our most abundant birds, and ranks second to none in number that we are acquainted with. Under the names of 'Chippy,' 'Chip-bird,' and Chirping Sparrow,' it is known to every boy and girl in the country. Familiar, confiding, harmless, and also very beneficial,—which characteristics have endeared it to our memory. It has no pretensions to song, its only note being "*chip, chip, chip.*" Its plumage is plain, yet it is in perfect good taste.

The Chipping Sparrow makes no pretense of concealing its nest. You will find it in almost any of the small bushes in your garden; on any small, compact shrub, or in one of the trailing vines on your porch. Its nest is a marvel of neatness, being composed almost entirely of fine roots lined with horse hair. In this the female deposits three little eggs of a beautiful blue color, slightly speckled at one end with black. In two weeks they are hatched. Reader, have you ever seen a young Chipping Sparrow? If so, you will remember what odd looking little creatures they are. All eyes and mouth, with a very small body. These young birds are fed almost entirely on small worms and grubs, and as they possess a voracious appetite, we leave it for the reader to calculate how many it takes to supply them.

DESCRIPTION OF A NEW AM. FERN.

BY R. ROBINSON SCOTT, PORT KENNEDY, PA.

This Fern belongs to the genus Asplenium, and may thus be described:

ASPLENIUM, *L.*—Fruit linear, oblique, separate, attached lengthwise to the upper side of the simple forked or pinnate free veins. The indusium opening along the side towards the midrib, straight, fixed by its whole length, flat, membranaceous.

§ *Fronds evergreen.*

A. EBENOIDES (Nova species) barren fronds spreading, 4 to 6 inches long, lanceolate, pinnate at the base, pinnatifid towards the apex, tapering into a slender prolongation; apex rooting; rachis black. Fertile fronds 8 to 10 inches long, nearly upright; pinnate at the base; pinnules of unequal length; an inch or more long; linear lanceolate, frond tapering into a slender prolongation, sinuose and proliferous; midrib permanent to the apex; fronds more membranaceous than A. pinnatifidum, which, with the black rachis, distinguishes it from that species.

Found in 1862, 8 miles from Philadelphia, on the west bank of the Schuylkill. Only one plant could be found, which is now in cultivation, having been divided, thus making two individuals.

[We have before referred to this discovery of Mr. Scott's, as probably tending to throw some light on the much discussed origin of species. The fact that but a single plant has been found, would rather favor the idea of its being of a hybrid origin —or, if that term be inadmissible as applied to Ferns, a singular sport or variation from some original type. On the other hand, it is so entirely distinct from any known 'type,' that it is impossi-

[ASPLENIUM EBENOIDES.]

ble to guess at any original origin of that kind. Its characters are as distinctly its own, as those of any species ever named and described.

Is it a hybrid or variation? or, is it a species? Is it the last individual of a declining race, or is it the first creation of a new one?

The fern is a very beautiful one in itself, apart from the puzzling interest it will have to men of science.—Ed.]

THE WASHINGTONIA GIGANTEA.

Mammoth Tree of California; *Wellingtonia* of Lindley (English); *Sequoia* of the French.

BY P. BARRY, ROCHESTER, N. Y.

In the July number of the *Monthly*, page 202, Mr. W. D. Brackenridge of Govanstown, Maryland, makes notice of a young specimen of this wonderful tree now growing near the city of Baltimore, where it appears to succeed well. To this I will add, for the benefit of those who take an interest in rare trees, that here at Rochester, full four degrees further north than Baltimore, we have growing in our grounds about twenty specimens, ranging between ten and fifteen feet in height, perfect pyramids of foliage and models of symmetry. Three of them measured as follows:

No. 1—12 feet 6 inches in height; 8 feet 4 inches diameter of lowest tier of branches; 2 feet girth of trunk at the base.

No. 2—13 feet 6 inches in height; 8 feet diameter of lowest tier of branches; 1 foot 6 inches girth of trunk at base.

No. 3—14 feet 6 inches in height; 9 feet diameter of lowest tier of branches; 2 feet girth of trunk at base.

The other specimens do not vary much in measurement from these. They are all of the same age, and stand in two groups very close together. The ground on which they stand is a dry sandy loam, well protected from the west winds by high grounds adjoining.

These trees are all nine years old from the seed. We obtained the seed from California in the winter of 1855; the plants were kept two years in pots, and planted out where they now stand in 1855.

During the seasons of 1856, '57, and '58, we sent nearly 4000 plants to England.

It was believed at one time that this tree was confined to one locality in California, but it has recently been discovered that it abounds over large tracts of country on the western flanks of the Sierra Nevada.

[We saw the specimens referred to by Mr. Barry when at his grounds last fall, and they were models of health and beauty. We have not, however, seen one healthy specimen of any size near Philadelphia, and should be glad to have reports of it from other quarters. Mr. Barry reports the plant as *Sequoia* "of the French," but is proper to observe that it is also the name adopted by the American botanists, *Washingtonia* being simply a newspaper name, not recognized in Botanical works.—Ed.]

ON LANDSCAPE GARDENING.

BY E. FERRAND, DETROIT, MICH.

It is a common error to look at the laying out of grounds as a matter of only secondary importance. Men of means, who spend large sums of money in establishing a fine country residence, and who neglect nothing towards the utmost completion of their houses, will often overlook that most important of all points in the creation of a place,—the proper and correct disposition of the scenery, planting and general embellishment of the grounds.

It is the great mistake of many to think that they are capable of laying out their places properly themselves, because they have taste in judging of properly ornamented grounds. But, though they may be persons of taste and skill, they do not estimate their ability to see and properly profit by all the circumstances a rough place may offer for ornamentation and display—making, in fact, the most of the given spot. It is one thing to be a good judge of paintings, but quite another to be able to paint them. Others will give the laying out of their grounds to unqualified workmen. In either case they do not consider the great importance of the subject. This is evident to one visiting many of the fine residences which line the shores of the Hudson river, where nature has been so prodigal in providing sites for adornment. Instead of finding the same taste applied which directed the buildings in the Landscaping of the surrounding grounds, the visitor will be amazed at the want of harmony between the house and the general landscape; when, by skillful arrangement, and without any more expense, those same places might have been made equal to any of the beautiful gardens which surround houses of the same class all over Europe.

The only way to account for this is by supposing that people do not reason upon the difficulties of the profession,—they do not imagine what study he who desires to become a proficient Landscape Gardener must go through: indeed, his task is far more difficult than that of the architect or builder,

for they can judge of the immediate effect of their work, while he must paint in his own mind, and forsee the result of his labors, which at the time of his effecting them are mere sketches, the shadows and lights being forseen as when trees have grown and years have passed away. The real Landscape Gardener stands also in the same rank with artists and painters, and must partake of the inspiration of the true poet; he must be very intimate with nature, and must, so to speak, work in concert with her; he is also expected to be well acquainted with practical gardening generally, that he may be enabled to make judicious selections of the plants he employs, according to the scenery, soil, location, etc.

The art of Landscape Gardening deserves to be, and must be encouraged in this country. The reason of there now being so few good Landscape Gardeners here is the general neglect which they experience,—let the art be appreciated as it should be, and men of abililty will enter its ranks. There are enough men of knowledge and talent who only wait till opportunities present themselves to bring their skill into general usefulness; and if my feeble voice had any chance of being heard, I would recommend to Horticultural Associations the offering of premiums for drawings and plans of landscapes as well as for plants, flowers, and other novelties, to none of which is Landscape Gardening second, either in interest or value.

While on this subject, I would notice what I consider some of the defects in this way in the Central Park, New York. I had the pleasure of a walk through it, for the first time, about the end of October, 1863. Gardeners and laborers were busily engaged in planting. It seemed to me that very little of the due attention was paid to that very delicate operation, upon which so much depends to obtain fine trees, and the vigor of which is so necessary to bring out its fine features: for, notwithstanding a tree may vegetate, even if not properly planted, it will never attain the beauty it would have done had it been managed more carefully. Some of the trees there had been so badly taken up at the nursery as to have their roots crushed and cut so short that they must have failed to become flourishing trees. The trees were planted too close to the walks—this applies principally to evergreens. I do not make these remarks to find fault, but consider the grounds a fair subject of criticism, and as the public pay for it, they have a right to expect the work to be done in a proper artistic, scientific and careful manner.

During the last summer I was again through the Park, and was pleased with the cleanliness and order everywhere prevalent; but I noticed a great want of art in the distribution of the ornamental and border plants. The foliage plants are entirely neglected. Such as Ricinus, Wigandias, some of the Solanums, Gynerium, Arundo foliis variegatis, Cannas, and many other of the foliaged plants furnish the public grounds in Europe with their most splendid attractions, and there is no excuse for their neglect here. In the distribution and proper arrangement and grouping of such plants some skill and experience is requisite, and if introduced, none but competent persons should be employed to plant them. We all wish to see the public grounds of this country equal to those of Europe, and it is important therefore to start right from the beginning of our attempts at these improvements.

SUBSTITUTE FOR HOPS.

BY D. R. KING, ESQ., PHILADELPHIA.

During a recent visit to some friends in Delaware, I was informed that they had for some time substituted a common weed (*Gnaphalium polycephalum*) for hops in making the ordinary Indian meal yeast cakes, which are now so commonly used in country districts for leavening bread. The process of making the cakes is very much the same as when using hops, viz.: Make a tolerably strong decoction of the whole plant, leaves, stem and flower, in fact every thing but the root, by boiling gently; strain, and mix with Indian meal until thick enough to make cakes of, then let it stand in a rather warm place until fermentation has taken place, or, as it is commonly termed, '*risen*,' then make it into thin cakes about half an inch thick, and dry them on a board in the sun, and when perfectly dry, put them away for use.

This plant is known in different localities under different names. Some call it the '*Everlasting*,' from the fact that it preserves nearly the same appearance when dry as when growing. It resembles somewhat the white French Immortelle, which is also a Gnaphalium. In Delaware it is known as the '*Old Field Balsam*" from the fact of its growing in old worn out fields. In Pennsylvania it grows abundantly in old pastures or stubble fields, that have not been much cultivated. I can state from experience, that the bread made from these cakes was much superior to that made from hop cakes, and had not the slightest unpleasant taste. The flower heads contain more of the peculiar properties, but the stem and leaves are also used. On enquiry, I find that the origin of this discovery was in East Tennessee, during the war, thus affording another proof of the truth of the old adage, "Necessity is the mother of Invention.

The Gardener's Monthly.

PHILADELPHIA, SEPTEMBER, 1865.

☞ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

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MODERN IMPROVEMENTS IN FRUIT CULTURE.

It is very common to hear complaints that fruit culture degenerates,—that we do not have fine good fruit like "we used to do;" and that what little we do get, is at the expense of greater labor and pains than any our forefathers employed.

We have only to take down from our library shelves any old book of a hundred years or so ago, to note how fallacious is the image we would picture to ourselves.

Let us, for instance, take up the "Treatise on Fruit Trees," by Thomas Hitt, gardener to Lord Robert Manners, at Bloxholme, Lincolnshire, published 1755. We find this old gardener considerably bothered with his blights and funguses, his caterpillars and other insects; and we find recommended, just as we have to do with plums and so on at the present day, that the most certain way to get the fruit is to cover a few with gauze where they grow thick together. He has quite a formidable list of troubles and ills; and though amongst them we find all our troubles except perhaps Plum knot, they had many more troubles that we have not. We are a favored race, and in favored times, —and if we do not have as good fruit as our grandfathers, the fault is evidently with ourselves.

In looking through Hitt's treatise, it is interesting to note how few were the varieties they had to select from, by which to secure the pretty good crops they generally had; while some of the varieties named, show them to be older than we generally think them to be. The "earliest Pear" of that period was the "Petit Muscat, not doing well, however on standards, but excellent on dwarfs." The Muscat Robert was the next best early. Citron des Carnes "ripens end of July." The next to ripen is the Magdalen or St. James, "taking its name from the period of ripening." Then follow Green Chisel, Bruit Bonne, Jargonelle, Blanquett, Summer Bergamot, Early Rose, and Late Rose, Orange Bergamot "which is an excellent Pear but so liable to canker," August Muscat, Salveage (probably Sylvarge), Cassolet, Musk Bonne Chretien "very liable to canker," which we take to be a disease very like unto our fire-blight of the present day, Summer Bon Chretien "the heart of which is the last part to decay, like that of a good Christian, from which circumstance it takes it name," Mon Dieu "as called by Monsieur Merlet," and which seems to be a much older name than D'Amour, now adopted, Doyenne or Dean's Pear (also called "Michelmass Pear," also "Snow Pear,"), Autumn Bergamot, Red Beurre (same as our modern Brown Beurre, "but apt to canker,"), Gray Beurre, November Monsieur Jean, January Monsieur Jean, Crassane, L'Epine d'Hiver, Swan's Egg, Bezy de Quersey (ripe in December and January, "full as rich a juice as any Pear of its season,"), St. Germain (of which it is said "it is necessary to renew the wood frequently or the flesh gets 'stony,'), L' Echasserie, Ambrette, Marquis (the best Pear of the season—December and January), Virgolense, Colmar, Winter Rousselet, Martin Sec "valuable because it is in eating when good ones are scarce."

Modern pomologists consider the two last the same, but our author describes them distinctly as two separate Pears. Easter Bergamot, Winter Bon Chretien 'coming on in March, April and May.' There are said to be many varieties, he says, but he thinks, from an observation of them "for thirty years," they are the same; is this Pear known to modern growers? Chaumontelle.

"Baking Pears"—only five are named: Bezi de Henri, Parkinson's Warding, Bell, Black Pear of Worcester, Catillac.

We have given the whole list, as it will no doubt interest the modern readers.

With our hundreds of improved varieties, and all the knowledge that science and art have given to us of culture and diseases; and with no more insect enemies or other drawbracks than that were known over one hundred years ago, we ought to produce good results,—and we do, if people would only see it so. There is some trouble in fruit growing. There always was trouble, but there always was good fruit for the labor; and we guess there always will be while time shall last.

THE CURCULIO.

We give in this number, a short but highly suggestive note from Mr. Rathvon, Professor of Entomology to the Pennsylvania Horticultural Society, as to the destruction of Curculio by sweet liquors in wide mouthed bottles. We attach importance to this article, from the fact that there is a widely prevailing impression that the Curculio cannot be trapped in any way. This has been so generally received as a fact that were the note from a common observer we should place little reliance on it. Mr. Rathvon is too well acquainted with the nature of the insect tribes for us to doubt for a moment that he would be led into any such mistake as to take a statement for a fact that was not possible at the outset,—so that whether there be any mistake or not, in this case of Curculio reported caught with other insects; there still remains Mr. Rathvon's endorsement of the possibility of the scheme.

We sincerely hope our pomologists will give attention to this statement. If they can be caught this way, there is no cheaper or better remedy. We have repeatedly given our opinion that the only effectual mode of destruction of insects is to war against them individually. Wholesale plans are failures. Caterpillars, measuring-worms, sack-bearers, rose-bugs, and all vermin that are large enough to be seen, and which do not fly away, can be much more cheaply hand-picked off than most persons have any idea of; and the smaller ones can be entrapped and destroyed by various devices.

Moths we know are attracted by sweet smelling odors and good liquors, and millions may be caught in large orchards by a systematic plan of operating against them.

There is one point we think often lost sight of. All insects, of whatever class, whether choice in their selection of food or not, *drink*. The common house-fly, for instance, is an enormous guzzler. Our friend, Mr. Coleman Fisher, of Montgomery county, takes advantage of this fact, to have saucers of water, in which a small quantity of Cobalt is dissolved, always standing about the house. The flies drink thereof, and go out of the house to the open air to die; not even troubling him with the disposition of their bodies.

These and similar schemes, we are sure, are the "royal roads" to secure crops from insects.

OBITUARY.

C. R. OVERMAN, OF ILLINOIS.

We have never had the painful duty of recording the death of our friends to come on us with more suddeness than the following note from Mr. Phoenix explains. But a very few days ago, a very interesting letter from him closed with the "hope that it would not be long before you write to me again." Few men have done so much as Mr. Overman for Western Horticulture, and no one whose loss could be more deplored:

"Our beloved friend C. R. Overman died at 9 o'clock yesterday morning, (July 19th),—disease, inflammation of brain and stomach: ill less than a week. A most bitter grief and burden to all of us, and a *sore* loss to American Horticulture.

C. J. WISTER, ESQ., OF GERMANTOWN.

Died, at his residence in Germantown, on the 23d of July, 1865, in the 84th year of his age, Charles J. Wister, Esq.

This excellent and amiable gentleman claims a tribute at our hands as an old and zealous Botanist and Horticulturist. Having early retired with an ample fortune from his business as a merchant in Philadelphia, to his paternal estate in Germantown, he passed the rest of his life in the cultivation of Natural Science, and in his duties as a public spirited citizen. He was one of our earliest and best mineralogists, chemists and botanists. He was elected a member of the American Philosophical Society in 1811, and was an early, if not an original member of the Academy of Natural Sciences. He explored diligently the minerals and plants of the region around Germantown, and his name occurs in Cleveland's Mineralogy, published in 1822, as the authority for numerous localities. He delivered a course of lectures on Mineralogy, and two courses on Chemistry at the Germantown Academy, at a time when the modern Chemistry was new to us; and we well remember the interest excited by his successful experiments and clear explanations. He erected a small observatory in his garden, furnished with a telescope, a transit instrument, and an astronomical clock, which were long a source of interest and amusement to him. An amateur mechanic of no mean skill, he spent many of his winter mornings in his workshop, surrounded by the clocks sent to him for repair by his friends and neighbors. His friend, Professor J. W. Conrad, like himself an acute and self-taught naturalist, read a paper to the Academy of Natural Sciences, in 1827, on the *Osmunda Claytoniana*, a fern which had been almost lost to American Botanists, and which our friend Wister had discovered growing near Germantown. In 1829 Professor Conrad described a new species of Corallorhiza, which he called *C. Wisteriana*, in honor of its discoverer, who found it growing on the banks of the Schuylkill, near the falls. They are both described in the 6th volume of the 'Journal of the Academy.' That relentless iconoclast, Asa Gray, has demolished both these species, regarding the former as a

sport of *O. cinnamomea*, and the latter as a large form of *C. odontorhiza*. However that may be, —and we must all bow to the decision of Dr. Gray, —the record remains, and shows how carefully and zealously Wister had explored the plants of his neighborhood. For many years past his infirmities of body had put a stop to his botanical tramps, and his amusements centered in the cultivation of his garden. He had collected here a great variety of hardy ornamental or curious plants, both foreign and native, and derived as much pleasure from distributing them among his friends as from superintending their cultivation. In these tranquil pleasures, surrounded by his children, "the general favorite as the general friend," he wore his bright and peaceful old age, till gently summoned by the Great Master to his final reward.

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.

Rules for Fruit Sending.—At this season of the year we usually receive from many quarters samples of new fruits for our opinion of their merits, or of old ones for name. If the fruits are small and soft, like berries, a few only should be sent, and these kept from pressing on one another, or the whole will be crushed by each other's weight. They should also be tight, so as not to shake about and bruise.

When sent by mail, they should go in a tin box. There are hundreds of pounds weight in a mail-bag, and a paste-board box, if it gets underneath, is sure to be crushed.

When sent by Express, it should be marked on the box, "paid through to Germantown." We never charge of course, or receive, directly or indirectly one cent for any opinion we give of things in the *Monthly*, and it is not therefore fair that we should be saddled with expenses of transportation. One would suppose common courtesy would dictate this course, and we have thought it would only be doing ourselves justice to refuse to receive things sent otherwise.

Seeding of the Hydrangea—*X., Salem, Mass.*—"Have any seedlings been raised from the garden Hydrangea (*H. hortensis*, Sieb.)? Such offspring would be desirable, especially if a variegated leaved one could be obtained, similar to the silver-edged Japan Hydrangea, lately introduced. An accidental deviation in the flowers of the former plant, has put me on this train of thought. Some cuttings, taken off early in May, were kept in water until July. Such as had flower-buds already formed, on protrusion of roots emitted a few leaves and partial bloom. In the corymbs, the outer florets only were radiant and barren, the inner were perfect, consisting of four larger deep rosy petals, two stigmas and eight stamens full of a snowy white pollen. Could such stinted and starved plants be made to form seed? Is this a return to the normal form of the original plant? It would be desirable that some practical gardener might institute experiments in this direction, and compel these barren beauties to yield seed and offspring. Who will try?

[We had never heard before of the garden Hydrangea showing any disposition to produce perfect flowers. On reading the note, we examined a large bed of Hydrangeas on our grounds, and found some perfect flowers in every bunch, and some few of them with seed pods pretty well developed, and which will probably mature. As our correspondent remarks, it is well worthy the attention of Horticulturists of leisure, as very probably new varieties would be obtained from seed.]

Protecting Vinery Grapes in Winter—*T. N. H., West Grove, Pa.*—"Cant thee please give us a full detailed article this fall in time, for use, on wintering exotic Grapes in houses, and Peaches and Nectarines in pots. My vines started weak, I fear from insufficient or improper protection. The rafters go down to the border, and there is no shade. The Nectarines bloomed well, but set very little fruit. There are many readers, I think, who will be glad of the information on these subjects."

[The sun shining on any thing frozen severely, is liable to injure it. Fruits which often blossom freely in spring, and astonish their owners by not "setting fruit" after all, we attribute to injury to the undeveloped stamens or pistils, while yet in the bud by severe weather. The wood and leaf buds are injured partially in the same degree. All the protection grape-vines, Peaches, etc., require, is to be kept from the sun in winter. Vines can be tied up with straw, or laid on the ground and covered with corn-stalks, cedar-brush, or any other material, lapping gas-tarred paper around the lower part of the stems to drive away mice or rats. The most successful Peach and Nectarine grower we know, puts all her pots (for it is a lady amateur) in a shed on the northern side of the garden, and piles in a large quantity of dry leaves about the pots, to keep them from bursting by severe frosts and from drying up. Here they stay till spring. Gas tar is also put about in the mass to drive away the mice. Any barn or shed will do. Vineries we think are best shaded in summer; but the best material is yet an open question.

Fruit Prospects in Georgia.—Our old correspondent, Mr. P. J. Berckmans, writing on the 5th of August, says:

"My fruit crop is *immense*; unfortunately I cannot find sale for one-quarter of it here,—communications with Savannah, Charleston and New York, being too irregular, have prevented me from shipping my fruit as formerly. I wish you could spend some days with me now, and I would make you eat such Peaches as you never tasted before. Apples and Pears have produced largely also. Our Grape crop is a partial failure. The era of the Catawba seems to be ended, it fails regularly. I have planted the Clinton, which I find, from six years fruiting, to answer our purpose for wine making admirably. Hartford Prolific were ripe (thoroughly) on the 30th of June. This is five days sooner than I ever had them. I gathered my Clinton on the 25th or 26th of July. The Catawba will be ready for the press in about ten days. We have had the warmest weather throughout July within the memory of the oldest settler. My experience is that it was terribly hot, too much for tender plants to live through it, and with all my care, I lost the largest part of my young evergreens of last winter's propagation."

Entomological Society of Philadelphia.—We have received a circular from the Secretary, giving a history of the origin, condition and property of this society, from which we learn that in March, 1859, the Society was organized, and in April, 1862, it was duly incorporated under the laws and by the Legislature of the State of Pennsylvania. Through the assistance of Naturalists from all parts of the United States, it has been enabled to accumulate very large collections in every department of Entomological Science, and has communicated to the public, and continues so to do, series of valuable original Papers, through the medium of its "Proceeding," of which three volumes have been issued, and the fourth nearly completed.

The publication of the "Proceedings" of the Society was commenced in March, 1861, under limited means and under various difficulties, which have been overcome by the energy of its friends, and the liberality of its scientific patrons, among the latter, chiefly by the active co-operation of the late lamented Dr. Thomas B. Wilson, late President of the Academy of Natural Sciences.

Upon the issue of the first number, circulars were distributed, soliciting subscriptions at $1.00 per annum. This low price was fixed upon, to enable students of moderate means to obtain the publication; and with the increase in value and size of the "Proceedings," this end has been steadily kept in view, and they have been furnished to subscribers at far below the cost of publication.

Under the good management of the Publication Committee, and the well-directed liberality of its late Chairman, at the commencement of the third volume, the "Proceedings" compared favorably, as regards size, printing and paper, with any periodical publication in the United States, while the scientific value of the papers contributed, is unquestioned, and in many cases very high. The third volume was finished in December, 1864, and contains 708 pages of printed matter, and 6 plates, all published in the short space of 9 months.

Up to January (1865) meeting, Dr. Wilson presented the Society with an investment equal to $5000, on condition that it should be held *in Trust* as a "Publication Fund," the income derived from the same to be exclusively applied to defray the publication of the authorized periodical of the Society. Laws for a "Publication Fund" were immediately adopted by the Society, and the Publication Committee has now an annual income of $300, exclusive of that derived from the sale of the "Proceedings," which has so far been only $170 for 1865, but which will probably swell to $250 or $300 by the end of the year, making an annual income for the Committee of not more than $550 or $600, which would not go far in keeping up the "Proceedings" as they have been maintained for the last two years.

At this critical moment Dr. Wilson suddenly died, leaving his plans for the permanent establishment of the Society and of its authorized Publication, but very partially fulfilled.

The Committee is embarrassed by the want of funds to carry out its promises, which were given at the instigation, and with the promised support of its late Chairman, Dr. Wilson.

Alone on the public ground of attaining an adequate knowledge and illustration of the Entomological fauna of the United States, does it seem proper that the publication of these "Proceedings" should be continued with, and the fact that the promulgation of this knowledge will benefit the Agriculturist

must be borne in mind; but the additional circumstance that our Insects present very interesting and highly original forms, compared with those of the Old World, renders it a matter of great general scientific importance that these should be made available to Science. When it is further reflected that no scientific (or otherwise) Institution in the United States is devoted exclusively to this department of Science, the due value of sustaining this Society and its Publication cannot fail to be rightly appreciated.

To insure the permanence of the Society and the continuance of its publication, an income of $3000 is judged to be certainly required, representing a Funded Capital of $50,000. Of this sum $10,000 has been already realized and funded, viz.: $5,000 for the "Publication Fund," as above mentioned, and $5,000 donated by Dr. Wilson for the maintenance of the Society. We desire, then, the sum of $40,000, in order to complete the welfare, and effect the permanent establishment of our Institution.

The Society has reflected that it is in no position to offer any advantages that might be considered equivalent by subscribers to this Fund of $40,000, for the individual sums of money donated, but it offers an Honorary Membership to those who give monetary support at this juncture, while it suggests that the minimum sum to be tendered by Subscribers, be fixed at $100. To all subscribers to the sum of $500 and upwards, the Publications of the Society will be furnished free of charge during the life-time of the subscriber, while it is considered that this latter advantage is inconsiderable, since the "Proceedings" are intended to be published at a small subscription price, and that in considering the amount of individual subscriptions, subscribers will have to be influenced mainly by their good will to the cause for which their pecuniary assistance is solicited.

J. H. B. Bland, *President.*
J. Frank Knight, *Rec. Sec'y.*
J. W. McAllister, *Treasurer.*

Fruit Prospects at Terre Haute, Ind.—*J. G. H.*, under date of August 5th, writes:

"I see in the last number of the *Monthly* several reports in regard to fruit crops in different localities, and since Terre Haute is making great advancement in growing fruits, allow me to make a brief report.

The Strawberry crop was exceedingly fine: sustained very slight injuries by late frosts. The varieties grown here extensively, and with success, are Wilson's Albany, McAvoy No. 1, Great Austin, Triomphe de Gand and Russell's Prolific.

The crop of Cherries was comparatively small, injured some by late frost.

The Pear crop is very good. The market has been well supplied with early Pears. The late varieties are promising.

Currants were very plenty, the Red Dutch being principally cultivated. Several trials have been made to make wine this year.

Gooseberries in abundance, Houghton being mostly cultivated.

Raspberries very plenty, Am. Black Cap is the leading variety, although many new varieties are introduced and crowding the old variety.

Blackberries are very fine, the Lawton is the standard berry.

Apples are not so plenty this year in this vicinity, though there are a great many in neighboring counties.

We have no Peaches this year, the trees being killed two years ago.

Grapes are promising. Catawba rotted to some extent. Delaware, Concord and Diana, free.

Fruit generally commands high prices in market this year, which serves as a stimulant to beginners.

Layering Vines in a Vineyard—*P., Alton, Ills.*—"In an article from the pen of Mr. Hussman, an eminent grape-grower of this section, it is recommended to layer Grapes the first season in the vineyard. I intend setting out a small vineyard this fall, and wish to perfect my ideas of management in advance. I have had little experience with the Grape, but with other things have supposed layering the first year after planting injures the whole plant. Please let us have your opinion?"

[You are right as to the injury; but there may be some advantages gained by Mr. H.'s plan, that would more than counterbalance that injury. Certainly where the utmost vigor in the youg vine was an all-absorbing matter, we should by no means layer the first year.]

Removing Hollies in August—*E. M., Harrisburgh, O.*—"In looking over the May number of the *Monthly*, I was much pleased with the remarks of Mr. King and yourself before the Pennsylvania Horticultural Society, in regard to the hardiness of the Deodar Cedar. If some seedlings are hardy and others tender, it is quite important to propagate from the hardy ones, as every effort of mine to grow it has proved a failure.

I recollect at a former meeting of the Society you remarked that the American Holly was transplanted best in August. Would you advise me to try the experiment when the trees are to be brought here from Philadelphia?"

[We have had no experience in sending or receiving Evergreens to or from a distance in August, and should fear that the chances of drying up or heating would be so great that it would not be safe to run the risk; where they can be transplanted the same day, it will be found safe.]

Destructive Insect on Evergreen Trees.—Mr. C. Carrigan left at our office some specimens of a sack-bearer which had completely defoliated many of his evergreens, and which proved to be the very common and very destructive little villians, known by various names, such as Drop-worms, Basket-worms, etc. The Germans call them Sackstrager (Sack-bearers). Hubner called them *Canephoræ*, or Basket-carriers, because the cases of some of them are made of little sticks, wicker-basket like. They belong to a class of Lepidoptera allied to the European genus *Psyche*, also resembling in some respects the Orgyia. We have several genera: the *Oiketicus*, or Œceticus according to some critics, and the *Perophora* (Melscheimer's Sack-bearer). They will soon strip an evergreen of foliage. Every cocoon ought to be pulled off and mashed or burned. The female cocoons hang on all winter. They are filled with eggs, that hatch into minute little caterpillars. Suspended by a web like the Drop-worm, they come from the cocoons, and speedily commence feeding, and form for themselves a casing from the leaves upon which they feed. This casing is lined by a tough web of cottony fibers. They increase their habitations like the moth from time to time, as they undergo their moultings; or drop their former habitation and build a new and larger one,—this is their general character. They are truly a great pest, and do a vast amount of damage during a single season, if not looked after.

Mr. Jacob Stauffer first described this insect some twelve years ago in the *Penna. Farm Journal.*

Fast-growing Trees for California—*K., Sacramento, Cal.*—Will the *Monthly* tell one of its distant friends what are the fastest growing forest and ornamental trees, suitable to fill a ten acre lot on the outskirts of a city, intended as soon as possible for a shaded place of public resort. In our streets we use the Cotton-wood and Locust principally; but every thing that is planted grows. The Ailanthus does finely, but common consent here has declared it a nuisance. The Cotton-wood is nearly in the same fix.

[The Buttonwood or Plane-tree, Silver Maple, Pawlonia, Larch and Birch, are all rapid growing and unobjectionable. We may add Catalpa, Sycamore Maple, Sweet Chestnut, Honey Locust, Tulip Poplar and Weeping Willow, as among tolerably fast-growers.]

Horticulturists in the South.—Letters from our old correspondents are now becoming common, and it is sad to learn how great have been our losses amongst them. One friend from Augusta writes:

"So far as I can learn, I am one of three only nurserymen of all the southern firms, that have been able to keep their nurseries going through the war."

Another, from Natchez, Miss., where we had a very large list of subscribers, says:—"Send me the back numbers, I am rusty on Horticultural matters. I, and Mr. R——. P——, are, as far as I can now learn, the only ones of your old set of subscribers now left, all the others killed or 'missing.' I was wounded at the battle of Chickamauga, but am thankful that I am now getting over it. We are ruined rebels, but hope you will have a little sympathy for us, even if we were wrong. One thing certain, we have learned a lesson we shall never forget. Amen."

Winter Treatment of Caladiums.—'*Sarah,*' *Newark, N. Y.*—"May I trouble you about my Caladiums. Can they be kept over winter in Conservatory heat. Last summer I had a fine assortment growing well in pots, and giving much pleasure, but I lost them all. As the cold weather came on, watering was discontinued, and they were put into a warm cellar, left in the pots, but soon decayed. Not one escaped."

[In a temperature over 65° there is no difficulty with Caladiums. They will live *in* water over that degree better than any other way. Under this temperature they should be kept as warm as possible, and never quite dry. Experienced cultivators lose them sometimes, with very dissimilar views as to the cause, which we suspect to be a weak or diseased condition of the growing plants. Very well ripened bulbs will keep quite dry through winter; but immature ones will not.]

Hybridizing Grapes.—We are pleased to learn that our correspondent, Mr. Jacob Moore, is still continuing his experiments with hybridizing grapes. From a private letter, received from him a few

days ago, we take the liberty of publishing the following extract:

"This year I have also crossed natives with natives: the Delaware by Rebecca and Adirondac; Rogers No. 4 and Diana Hamburgh. Then, too, I have made Rebecca the seed producing plant, crossing it with Delaware and Miller's Burgundy. Also I have crossed the best natives with the best foreign sorts, among them Concord and Hartford Prolific by Miller's Burgundy, for a wine grape. I continued with the physical excellencies of the native species."

Disease in Hemlock Hedges—*H. W. S., Fishkill on Hudson, N. Y.*—"All our Hemlock hedges are affected as the within,—in some cases all over; in others only on the topmost shoots. Have you the disease with you? What is it, and what is the cure?"

[This is known as the Hemlock Mildew, and is more or less common on many Hemlock hedges in the summer, especially in those severely trimmed, that may be growing in the shade.

We have not seen any remedy applied, as in our district the evil is not serious; but no doubt the mixture of lime and sulphur, found so complete a cure for grape mildew, would be as efficacious here. Drop a lump of stone lime in a barrel of water, with a quarter of a pound of flower of sulphur, and let it stand till it is clear, and then syringe with it.]

Strawberry Houses—*A Correction.*—In Mr. Gruneberg's article, page 171, we make him say, when describing Fig. 1, "This house is *not* suitable for intermediate culture." It should be "*is most* suitable," etc.,—an important difference.

In another column Mr. Gruneberg advertises his professional services. As will be observed by the reading of the advertisement, Mr. G. is a German, and has the reputation of being a first-class gardener, as his articles intimate him to be.]

Foreign Intelligence.—Under this head the *Gardener's Monthly* reproduces articles from the European Horticultural periodicals. We noticed in the July number of that excellent serial an article on the "Ornamental varieties of the Beech," which we thought read like something we had seen before. Upon referring to our file for September, 1863, we found it was one of our own articles, with a few verbal changes to adapt it to England, and it had been appropriated by the (English) *Gardener's Weekly* as original. The *Country Gentleman* also thought the article worthy of being reproduced here, and it also copied it from the English paper. There is nothing like foreign travel to improve individuals, and we suppose that an article is all the better for crossing the ocean.

[The above is from the *American Agriculturist.* Some few years ago it was a very common thing to find "our own articles, with a few verbal changes," "appropriated" by the *Agriculturist*, improved perhaps by travelling to New York,—and so barefaced was the practice, that most of the Agricultural press practically ignored the *Agriculturist.* Had the article referred to appeared in "those days," we should have not thought it possible *original* ideas, as in the Beech article, could be found in its pages. We note this fact in order to contrast what it is with what it was. With intellectual and honorable men like Prof. Thurber, Mason Weld, &c., to manage it, the *Agriculturist* has become one of the most respected, as well as one of the most useful papers issued from the American press, and it gives us much pleasure to have the opportunity, while doing it justice at the same time, of recording the high estimation in which we hold it.]

Seedling Raspberry—*L. S. M., West Milton, O.*—"I send you herewith a seedling Raspberry, of my own raising. It has borne fruit some four or five years, and might be termed 'everbearing,' as it continues to bear on the *young* wood until stopped by the frost,—being a *red* berry of *good* size (twice as large as Catawissa) and flavor, and *continuous* bearer,—makes it somewhat of a novelty. With me it is as hardy as the Catawissa, and grows stronger and taller, and is *five times* more productive. (I have rejected Catawissa as unworthy of cultivation). There is fruit on it now (July 13), in all its stages, from the unfolded blossom to full ripe berries. I hope the ripe fruit sent may reach thee in tasteable (testable) order. It appears difficult to propagate, producing *no suckers* and but few layers as yet."

[They were certainly an improvement on the good old Catawissa.]

Catalogue of the London Horticultural Society.—"In former times the London Horticultural Society published a Catalogue at stated periods (five or ten years, I have forgotten which) of all the fruits tested in its gardens, giving the correct or most usual name of each, and connected therewith the names which continued fruiting had proved to be synonyms, etc. Is it still published? Can copies be purchased, and if so, at what price? I ask for an answer through the *Gardener's Monthly*, because I think a great many others as well as your present querist would like to know."

[We believe there has been no recent edition issued.]

Kittanning Blackberry.—We have received from Mr. E. Williams, a small box of this variety. They had fermented on the way, and were worthless. Their size and general appearance, however, impressed us favorably, and was an additional cause of regret that our 75 cents for Express charges on a quart of berries from New York, had no better return. By the way, have not the Express Companies "learned how to charge" the last year or two?

Diseased Grape Leaves—*A. S., Smyrna, Del.*—Warty protuberances on the leaves, are caused by the puncture of a very small two-winged fly. The trouble is no serious injury, however, as the insects are fond of roaming. They will not probably be a trouble in the same place next year.

Specimens of Ferns.–From a Mass. subscriber, were too much dried and crushed to be distinguished with certainty. However, 2 is Cryptophlebium phyllitides; 7 Nephrolipis bulbifera. Press and dry a few good specimens before sending, and enclose them between pasteboard through the mail, and we will try and name the others for you.

Julienne Pear.—A friend leaves on our table a set of these Pears, and remarks that it is worthy of more attention than is usually bestowed on it. We think so too. It is perhaps variable in character, but not more so we think than other Pears. Certainly we have had no Pear of its season this year equal to these Julienne left us.

Name of Plant—*L. L. A., Fall River, Mass.*—*Duranta Ellisii*,—probably from Key West, Fl.

Books, Catalogues, &c.

Transactions of the Indiana Horticultural Society. 1865.

Twelfth Report of the Ohio Pomological Society. 1865.

We have before us copies of these annual serials, and must repeat what we have often said, that as well as Fruit-growers' Societies are usually supported, it is a matter of great surprise to us that they are not considerably more so than they are. Their value to every one at all interested in fruit-growing, in the immediate neighborhood covered by their aims, are inestimable; and when the low fee usual to entitle one to membership, and to a copy of the reports is considered, we doubt whether any could "do better" than be a member of some one of them.

These now before us we carefully place away for reference, as amongst the most valuable material that have come to us for some time.

National Jewels: Washington, Lincoln, and the Fathers of the Revolution. By the Rev'd. Andrew Manship.

This is a compilation by a celebrated pulpit orator of Philadelphia, the object being as stated in the preface, "to arrange and present in an inviting form the great patriotic sentiments of our national benefactors," from Washington to his "last martyred illustrious successor."

New and Rare Fruits.

Empress Eugenie Cherry.—A correspondent in your last number, page 210, inquires if there is a Cherry which really ripens in May? With me May Duke was fully ripe this season by the 22d of that month. You named two good Cherries earlier than May Duke, viz.: 'Belle d'Orleans' and 'Early Purple Guigne.' To these allow me to add a third, 'Empress Eugenie,' which I consider by far the finest of all early Cherries; it was fully ripe with me May 15th. When I imported this Cherry a few years since from France, it was recommended as larger, finer, earlier and better than May Duke,—this recommendation it deserves in every particular: not only is it much earlier and larger, but to my taste more luscious than May Duke; it is also an earlier and profuse bearer. The two year old trees in the quarters of my nursery, both on Mahaleb and Mazzard, were loaded with fruit this season. Any person who plants a Cherry tree should not omit this. I would remark it is more dwarf in growth than May Duke, has short thick shoots, with large, broad, firm, enduring foliage.

Our present season we consider early. Hartford Prolific Grape is nearly ripe (July 29th), three or four days will fully mature the bunches. Delaware has occasional berries coloring,—whilst not a berry has yet changed color on Creveling, the reputed rival of Hart. Prolific.—J. Saul, Washington, D.C.

ADIRONDAC GRAPE.—"I send you two small bunches of the Adirondac Grape. The bunches are rather small; the plant has been but two years planted, and I have lessened the bunches by growing all the layers from it I can. My object in sending it to you is to know if there is any grape that ripens as early as this grape. I have not any kind that will begin with it."—ISAAC PULLEN, Hightstown, N. J., August 14th, 1865.

[The bunches were small, easily accounted for by the layering referred to, which of course weakens the bearing stems; but of excellent quality. We received the same day from Mr. A. Scout, of Smyrna, Delaware, excellent Delawares and Concords, fully ripe, but no more, and this one hundred miles south of Mr. Pullen's. Our own Concords show but a faint trace of coloring; and the Concords and Delawares in the heart of our city, where they are always ten days or so earlier, are yet not ripe. Altogether, these specimens give us a more favorable estimate of the value of the Adirondac than any thing we have seen of it before.

New and Rare Plants.

LYCHNIS SENNO.—Mr. Peter Henderson writes:

"Enclosed is two flowers of Lychnis senno, a new plant, from seeds sent from Japan. It was introduced into England some three years ago, when, from its great novelty of coloring,—distinctly striped scarlet and white,—it created quite a sensation, and was figured in most of the illustrated magazines. It will no doubt prove perfectly hardy, as all others of the genus are from Japan, and will therefore be a great acquisition. It has been in continuous bloom from first of May, in the open borders until the present date, (July 20th, and bids fair so to continue until frost. The first flowers were perfectly circular, and from three to four inches in diameter. Those now sent are very imperfect, consequent on the hotness of this season,

[They were rather mashed by the mail, but distinct enough to show how pretty they had been.—ED.]

Mr. John Saul, Washington, D. C., writes of the same plant:

"Among the pretty plants recently introduced from Japan, is Lychnis senno. There is said to be several varieties of this plant cultivated in Japan. The variety which I have been fortunate enough to obtain is a bright scarlet. As it is a perennial, and will doubtless prove hardy, it is one of those plants which will soon find its way into every garden, however limited. The plant is of low growth (with me), not more than 12 to 15 inches in height; the flowers being of bright scarlet, and several expanded together; they are very showy, and have an extremely good effect.

Lychnis grandiflora, sent out within the past year or two, proves with me to be the old Lychnis coronata of gardens, grown considerably some years ago.

ROEZELIA REGIA.—It is thus described by its discoverer, M. Roezel, who has sent so many good things from Mexico:

"The floral stem measures five inches in diameter, and makes a pyramid of from 20 to 30 feet in height, on 10 to 12 feet in breadth; the branches are weeping, literally covered with thousands of white double flowers, of the size of those of the Polyanthus tuberosa, and of the same odor. Judging from the quantity of buds not yet opened, whilst there were some faded, it must keep in bloom for a great many weeks. This flower grows at an altitude of from 8 to 9000 ft. above the sea."

CLIMBING VARIETY OF ROSA DEVONIENSIS.—It may be interesting to know that this most beautiful of all light-colored climbing Roses, so successfully and universally cultivated in this neighborhood, is of the most vigorous and robust growth, making shoots from established plants, measuring from 18 to 20 feet in length in one season. It is a most abundant early and late bloomer; in favorable situations it commences to flower in May, and continues to produce its most beautiful blossoms all through the season, until late in November, and it retains its foliage all the year. It is very hardy, having withstood the severe winter of 1860–61. In this locality it grows and thrives in almost any soil or situation, even in thickly built parts of the city, amidst the smoke and dust of which it thrives and blooms in great perfection. So highly esteemed is this variety, that there is scarcely a villa residence in this neighborhood where one does not find this Rose, and no amateur considers his collection complete without it. Its blooms are of large size, some of them measuring 6 inches in diameter, and their shape is most perfect. It is in fact one of the best light-colored exhibition Roses in cultivation.—A ROSE AMATEUR, Bath, in *Gardener's Chronicle.*

[This will probably make a fine Rose for American pot culture.]

Domestic Intelligence.

FRUIT-PRESERVING AT THE ONEIDA COMMUNITY, N. Y.—I acknowledge myself an enthusiast on the subject of Fruit-preserving. Who is not? Let such an one, when found, view in mid-winter the most delicate and luscious fruits of our clime preserved in beauty and freshness; let him prove their delicate flavor; and his conversion will be summary and complete. The natural complement of fruit-producing is fruit-preserving. The latter secures the full benefits of the former; and in the two we witness the works of God and man beautifully blended.

The present system of preserving fruit in air-tight cans, jars and bottles, is incomparably superior to the old practice of drying fruits in the sun, and by the heat of stoves and ovens. The present process is more expeditious, and the results far more satisfactory. By the old method some of the finest fruits could not be preserved at all; and I think it safe to add, that in most cases where fruit was preserved by drying, the results were not entirely satisfactory—that the delicate flavor of fresh fruits was in no instance perfectly retained: while by the new method nearly all kinds of fruits may be preserved, and with few exceptions the original flavor may be nearly retained; and in some instances appears to be even improved.

The present process of preserving fruit is so simple, and seen to be so desirable, that besides the numerous large companies exclusively engaged in it, thousands of private families put up their annual supply of preserved fruit as regularly as they lay by a supply of vegetables for winter use.

For the information of those unacquainted with the process of preserving fruit, I may be excused for attempting to explain it as here conducted, somewhat in detail.

The fruit is first suitably prepared by hulling, assorting, or paring and cutting, as the case demands; and, in most instances, is immediately placed in clean glass bottles, filling them full, and when such fruit as Peaches, Pears, Quinces, etc., are cut in large pieces, it is best to take some pains to crowd the fruit into the bottle—otherwise the heating process will not leave the bottle properly filled with fruit.

Next prepare a syrup of melted refined or white sugar, and pour into the bottles, by the following rule: allow six ounces of sugar to one quart of fruit; or melt ten pounds of sugar in one gallon of water, and give one-half pint of the syrup thus produced to one quart-bottle of fruit. This rule is adapted to the Strawberry, Cherry, Peach, and other similar fruits. More acid fruits, like the Currant, require a greater proportion of sugar. Fruit put up air tight will of course keep just as well without sugar as with it, but it is thought much better to heat the fruit in syrup, than to heat it in water and apply sugar as it is used for the table.

The filled bottles are then placed in a steaming-box,—best when made throughout of wood,—the bottles rest on a false bottom of narrow slats covering the steam-pipe,—cold water is then let into the box until the bottles are two-thirds covered; the fruit is then gradually heated to the boiling point by letting steam into the water, through a pipe leading from the engine-room in another portion of the building. It requires from fifty-five to sixty minutes to properly heat or cook most kinds of fruit. They are commonly allowed to boil five minutes, but in some instances are taken out of the steam-box before they reach the boiling point.

Corks are made sufficiently flexible by steaming them twenty minutes with the fruit. They should be large enough to fill the neck of the bottle tightly, and require some force to crowd them in. Formerly one cork, as procured of dealers, was made to stop two bottles, but it is now considered better to use a whole cork for each bottle.

Until last year the Community used for sealing-wax, a compound of the following proportions: 1 pound of rosin, 1½ ounces tallow, 3 ounces beeswax; but common boat-pitch is now used, and is found to answer quite as well, and is much cheaper. It is prepared by first being boiled a few moments, and then heated every time a batch of fruit is sealed.

The fruit being sufficiently heated, the corks steamed, the boat-pitch ready, the bottles are taken successively to a table and quickly corked. The corks may be forced in by a blow from a mallet, or better by a small lever arrangement, or best by a machine which is used here and in other fruit establishments, which, worked by hand and foot performs this operation easily and rapidly. The portion of cork remaining above the bottle is pared off with a sharp knife, and left in convex form.

Some fruit-preservers, at this stage, pack their fruit away, laying the bottles down on the side and trusting to the cork, thus kept moist, to exclude the air, and sealing the bottles when they fill orders for the market, and when they are less hurried; but the Community have always sealed their fruit immediately after it is corked, which is done by dipping the mouth of the bottle in the melted sealing-wax so as to cover the bulb. Then transfer it

to a basin of cold water, dipping to the same depth to cool the wax. If the dipping is carried below the bulb or rim, at the mouth of the bottle, there is danger of cracking the glass. Now examine the sealed part to see if the wax has formed blisters. If there are blisters, rub them away with the finger, using a little tallow or oil to prevent sticking. It was formerly thought necessary to repeat the dipping operation in wax and in water; but it is now only done when the first dipping leaves the cork imperfectly covered.

The operation is now completed, and the fruit ready to be packed away on shelves or in chests in a cool, dry cellar. If placed on shelves, a cloth should be hung before them to exclude the light. In a few days after packing away, inspect the bottles to see if any show signs of fermentation, which may be detected by a foamy appearance of the fruit. If this observed in any bottle, it denotes either a crack in the glass or that the sealing-wax was imperfect. The bottle should be opened and examined, the contents scalded, and the process of sealing repeated as before. In some cases during the season, a little vegetable mold may be seen to gather on the surface of the fruit in the bottles, but this is not to be regarded, as it can be readily separated on opening the bottles, leaving the mass of fruit uninjured.

There is a variety of methods practiced in preserving Tomatoes. Our people scald and peel them, and place them in a steam-boiler, where they are boiled from twenty minutes to half an hour. The bottles are filled directly from the boiler—having been previously heated in the steam-box, so as to avoid the danger of bursting—and are then ready for sealing.

This steam-boiler is worthy of separate mention. It is made of copper, tinned on the inner surface, and cost about sixty dollars. It has a double bottom for one-third of its height; and steam being passed between the two lower surfaces, any thing placed in the boiler will be speedily cooked. Apple-sauce is here properly cooked in fifteen minutes. Vegetables, puddings, etc., may thus be prepared for the table in a much shorter time than in ordinary kettles placed over a common fire.

Green Corn is put up by being boiled fifteen minutes, then sealed in cans, and then boiled five hours.

Tomatoes, Squashes, Beans, and other vegetables, are put up without syrup of any kind.

Apples are put up in fresh apple-juice, and are thought to be better than when put up in water.

On account of the corroding effects of the acid which most fruits contain, it is better to preserve them in glass than in tin; besides, in this form they are more attractive and saleable. Of glass fruit-bottles a great variety is found in market—some of which deserve commendation, and most of which avoid the necessity of corking and sealing. They are, however, in general too expensive for those who put up fruit in large quantities for sale. For this reason, and because the Community deem the corking and sealing process, which I have attempted to describe, the surest plan yet devised, a form of bottle invented by Mr. Thackara is mostly used. For home consumption, a large number of gallon earthen jars have been filled. Fruit keeps as well in these jars as in glass bottles, and the jars cost much less.—*Circular.*

A Cherry Item.—Mr. D. S. Dunning of this county, whose Cherry orchard we gave some account last season, has lately been marketing his Cherry crop in this city. His crop has averaged him very nearly nine dollars per bushel. His Saturday's marketing, before breakfast, amounted to $305—his load, 30½ bushels, bringing him ten dollars per bushel. A fine morning's work.—*Prairie Farmer.*

Foreign Intelligence.

Grape-vine at Hampton Court.—The great Grape-vine is one of the lions of the place, and nobody thinks of going away until he has seen it. On our way to it we pass through the "Private Garden." Large Orange trees are the most remarkable objects. There are a couple of small green houses, and a few rare plants called the remains of Queen Mary's collection. The great *Black Hamburgh* Grape-vine is specially exhibited by the gardener, who receives a small fee from visitors. The house is seventy-two feet long and thirty wide on the rafters, and this vine covers every inch of the roof and is loaded in every part with large perfect bunches of fruit. It has produced as much as 2,500 bunches. It is planted outside of the house at one corner, and is carried in through the wall. It has no border of any kind, but appears to be growing under the walks, and the gardener says it has received no manures or dressings of any kind, for many years. The stem, at about three feet from the ground, is about thirty inches in circumference, and the entire length about 120 feet. It is truly an amazing production of this kind.

Forcing Hyacinths in Pots.—*Concluded from page 254.*—For general purposes, two pottings are sufficient, viz., one in the second or third week in September, of the early double and single varieties, and another in the first week in October, but not later than the second week; for though it is desirable not to plant them when a late bloom is wanted, yet as a rule, retarding the growth beyond its proper period, has a deteriorating influence on the vigor of the bulb.

Presuming them to have been potted in the middle of September, they should be removed from their situation out of doors to a shelf near the glass in the greenhouse, and where they can have air on all occasions except in time of frost and rain, even then a little air is advantageous. If not required to bloom early, let them have time; but if a few are desired early, the most forward may be placed in a temperature of 50°, and they will bloom in January. If not forced they will bloom in February, at which time, and a fortnight prior to it, the minimum temperature should be 45°, and in this they bloom to perfection. When the truss, or rather the bells, begin to develope, every other watering may be of weak liquid manure, as the size of the bells will be improved in consequence, but after they are in full bloom, the flowers will retain their beauty longer by watering with water only.

Those bulbs potted in the beginning of October, should be treated in precisely the same manner as the first lot, with this difference, they must be protected from frost, and not removed into the greenhouse until the third week in November. These, if kept in an ordinary greenhouse, will bloom splendidly in March and April, the essentials to success being—1st. Placing the bulbs in a cool situation until the pots are filled with roots. 2nd. Keeping them near the glass, for the more light the greater is the elaboration of the food, and the more stiff is the foliage, the more compactly are the bells arranged, the stouter the stalk that supports them, and the brighter the color of the flowers. The size of the flowers, and the shortness, or rather the stiffness of the spike depends on their having plenty of air on all favorable occasions. 4th. That they have no more heat than is sufficient to maintain the plants in a healthy, growing state, for the more naturally a plant is excited, the more satisfactory are the results. 5th. A free open soil with plenty of vegetable matter. 6th. Perfect drainage, and being kept free from worms. 7th. A moist soil at all times, neither too wet nor too dry; but double the quantity of moisture may be afforded when the truss is nearly developed, every alternate watering being with liquid manure, at the temperature of the house. 8th. When in bloom their beauty will last much longer if they are kept in an almost invariable temperature of 40° or 45, instead of a variable one; but they must be fully in flower or the colors will not be so bright, nor the flowers so fine, without a sufficiency of light and heat. 9th. The Hyacinth will bloom much more satisfactorily in a house from which frost only is excluded, than in one where more fire heat is employed.—*Cottage Gardener.*

How the Chinese make Dwarf Trees.—We have all known from childhood how the Chinese cramp their women's feet, and so manage to make them "keepers at home;" but how they contrive to grow miniature Pines and Oaks in flower-pots, for half a century, has always been much of a secret. They aim first and last at the seat of vigorous growth, endeavoring to weaken it as far as may consist with the preservation of life. They begin at the beginning. Taking a young plant (say a seedling or cutting of a cedar) when only two or three inches high, they cut off its tap root as soon as it has other rootlets enough to live upon, and replant it in a shallow earthen pot or pan. The end of the tap root is generally made to rest on the bottom of the pan, or on a flat stone within it. Alluvial clay is then put into the pot, much of it in bits the size of beans, and just enough in kind and quantity to furnish a scanty nourishment to the plant. Water enough is given to keep it in growth, but not enough to excite a vigorous habit. So, likewise, in the application of light and heat. As the Chinese pride themselves on the shape of their miniature trees, they use strings, wires and pegs, and various other mechanical contrivances to promote symmetry of habit, or to fashion their pets into odd fancy figures. Thus, by the use of very shallow pots, the growth of the tap root is out of the question: by the use of poor soil, and little of it, and little water, any strong growth is prevented. Then, too, the top and side roots being within easy reach of the gardener, are shortened by his pruning-knife, or seared with his hot iron. So the little tree, finding itself headed on every side, gives up the idea of strong growth, asking only for life, and just growth enough to live and look well. Accordingly, each new set of leaves becomes more and more stunted, the buds and rootlets are diminished in proportion, and at length a balance is established between every part of the tree, making it a dwarf in all respects. In some kinds of trees this end is reached in three or four years; in others ten

or fifteen years are necessary. Such is fancy horticulture among the Celestials.—*Technologist.*

Color of Flowers.—It is very probable that all the colors of flowers depend upon only a few approximate elements formed in the vegetable, and that their various hues are the consequence of the presence of acids affecting more or less this coloring substance. The following ascertained facts tend to support this theory:—The expressed juice of most red flowers is blue: hence it is probable that the coloring matter in the flower is reddened by an acid which makes its escape when the juice is exposed to the air. The Violet is well known to be colored by a blue matter, which acids change to red, and alkalies and their carbonates first to green and then to yellow. The coloring matter of the Violet exists in the petals of red Clover, the red tips of the common Daisy, of the blue Hyacinth, the Hollyhock, Lavender, and in the inner leaves of the Artichoke. The same substance, made red by an acid, colors the skin of several Plums, probably, also, gives the red color to the petals of the Scarlet Geranium. It is remarkable, that these, on being merely bruised, become blue, and give a blue infusion with water. It is also probable that the reddening acids in these cases is the carbonic, which, on the rupture of the vessel which encloses it, it being a gas, escapes into the atmosphere.—*Cottage Gardener.*

Grapes all the year Round.—For the last three years I have not been without a bunch of Grapes for my employer's table any day in the year. This year we commenced cutting new Grapes the 25th March. At the same time we had plenty of Lady Downes, West's St. Peter's, Barbarossa, and true Old Tokay of the previous year. The latter I consider the best late White Grape. What some people persist in calling Tokay, is only the Muscat of Alexandria, or a form of that variety. When I say late Grapes, I mean good plump fruit the last week in March. Grapes in January are considered late by some persons. I think a great deal of the old Tokay, when allowed plenty of time to ripen. It ought to be highly recommended as a White companion to Lady Downes, the best late black with me. Trebbiana is a most excellent winter Grape, but after January it will shrivel. Raisin de Calabre is another fine late Grape. I knew it well when at Chiswick, some eighteen years since. I was in hopes I had it true here; but unfortunately, my vines proved to be Sahibee, a worthless kind.

Which is the best early White Grape? Muscat Hative de Saumur promises well with me. We have it now, (May 15th) almost fit for table from vines started January 1st. This Grape has the true Muscat of Alexandria flavor, and the advantage of ripening so early. The next best White I find to be Buckland Sweetwater. With me this season it is all I could wish, which I hope to be able to prove next month, at some of the metropolitan exhibitions.

For the supply of Grapes all the year round, we have seven established vineries. The early houses are lean-to, 30 feet long by about 12 wide, large enough, I consider, for early work. It may, perhaps, interest some of your readers to know the different sorts in each house, and the time of starting to secure a constant supply the whole year.

No. 1—The earliest house. All Frankenthal, or by most people called Black Hamburgh. Generally breaks of its own accord towards October; fruit fit for cutting March 25th.

No. 2—Started 1st of December. Black Hamburgh, Buckland Sweetwater, and Black Prince, the former fit for cutting the middle of May.

No. 3—Started January 1st. Black Hamburgh, Black Prince. Lady Downes, grafted on the Hamburgh, comes very useful after the latter is over; and Muscat Hative de Saumur for a White. This is a large house, and furnishes a supply from middle of June till early in August.

No. 4—Started end of February. A selection of sorts, with Hamburghs for principal vines, ripe August and September.

No. 5—Break of own accord. All Hamburghs, ripe generally early in September. I find for them to hang well they ought to be ripe by the middle of September. I find they keep much better ripened by this time, than later. From these vines we have a supply for November, December, and January, and some seasons as late as the end of February.

No. 6—Started March 1st. All Muscat of Alexandria.

No. 7—Latest. Barbarossa, West's St. Peter's, Lady Downes, Old Tokay, and Trebbiana. This house has but little rest—just sufficient time to wash or paint the inside, top-dress the border, etc. The fruit is always hanging on these till the middle of March. Some growers recommend cutting the bunches off, sealing the ends, and suspending in fruit-rooms or some cool place; but I find if they will not keep on the vine they will not off.

The same result may be obtained from six Vineries, with care in making the selection for each

house, for early late or intermediate. To our No. 1, I should recommend Muscat Hative de Saumur and Buckland Sweetwater for Whites; and to No. 7, the latest, a Vine of Kempsey Alicante and Burchardt's Prince. The latter will be planted extensively when better known. Such is my practice for a supply of Grapes all the year round, and we generally succeed in producing good fruit.—William Hill, Keele Hall Gardens, in *Florist and Pomologist.*

Culture of Primula sinensis.—Taking them all in all, these are the most valuable winter flowering plants in cultivation. They commence to flower in the early part of November, and by care a succession may be kept up till the spring is far advanced. For bouquets also they are almost invaluable. Sow in March, April, May, June, and and July (with great care. for although so easily raised in the hands of some, it is nevertheless a great difficulty to many, who in many instances too hastily condemn the quality of the seed), in pots filled to within half an inch of the top with sifted leaf-mould, or what is better, with thoroughly rotted manure, which has been exposed to all weathers for a year or two. Leave the surface rather rough, and sprinkle the seed thinly upon it, not covering the soil; tie a piece of thin paper over the top of the pot, and place it in a warm house or hotbed. When the soil becomes dry, water the paper only; the seed will then germinate in two or three weeks; after which remove the paper, and place in a shady place, potting off when sufficiently strong into small pots, and place near the glass in a frame or greenhouse. The above method of raising the seed is always followed by one of our largest growers for Covent Garden Market, and never fails. One caution is necessary, never use peat mould or any soil liable to cake on the surface or turn green, as a loss of the seed is a certain consequence.—*Gardener's Weekly.*

Winter Treatment of Caladiums.—When glancing through your columns, I was much pleased to find a short note from J. W., asking for information as to the proper winter treatment of Caladiums, Alocasias, etc. I have often longed for some information myself as to the proper method of growing this most beautiful class of plants, and I shall be glad to give J. W. the benefit of my short experience. Some time early in March of the past year, I purchased plants of the six varieties of Caladiums named in J. W.'s letter. They came to me in the form usually sent out by nurserymen, viz., as very small tubers in very small pots. I placed them at once in my stove, which was kept at a heat of 70° to 80° Fah. by day, and about 60° to 65° at night.

The plants soon began to show signs of growth, and as these efforts of nature increased, I gradually gave them a more liberal allowance of water, always taking care that there should be no great difference between the temperature of the water and that of the stove. The atmosphere of the stove was kept constantly moist during the day by watering the path, keeping the troughs on the pipes always full of water, and by abundantly sprinkling the sand on which all my plants stand.

As soon as the roots reached the side of the pot, the plants got a shift, until at midsummer some of them were in 12-inch pots. The luxuriance of their growth was something wonderful—leaf followed leaf, each much larger than the preceding one.

Belleymei and Chantini were magnificent specimens; their colors being most beautiful. Succeeding so well with these six varieties, I was encouraged to purchase nine others, and I also had in my collection four Alocasias, namely, *A. zebrina*, *Lowii*, *metallica*, and *machrorhiza variegata*. I pursued the same treatment with these, and am glad to report an equal success with three out of the four varieties. The leaves of *zebrina* are now, including the leaf stalk, at least five feet long.

All things come to an end at last. As soon as the beautiful summer of the past year gave signs of passing away, so soon did my plants begin to slacken their vigorous growth. Perceiving this, I gradually allowed them less water, until, by the end of September, the Caladiums had quite died off, and were laid aside for the winter in the same house in which they had been growing. Not one drop of water was given them during the winter, and the Alocasias received a very small supply once or twice during the season. When March came, I was very curious to prove the success of my treatment. When my gardener began to repot the tubers, the first showed a tendency to decay, but had two offsetts. These, with the parent tuber, are all now growing vigorously. The rest were all perfectly sound, and from some I have now growing no less than six young plants. The result, then, of my experience is that the great essential for the successful wintering of Caladiums is, that the tubers should be kept perfectly dry. A high temperature does not seem necessary to their preservation, as the heat of my house was frequently as low as 45°.—*Floricultural Magazine.*

The Preservative Power of Ferns.—Doubtless many of the readers of this journal, when passing the shops of large fruiterers in London and elsewhere, have observed Apples, Pears, and other fruit packed in hampers containing Fern-leaves, and had they but inquired why these leaves in particular were used, the more intelligent of the vendors would probably have told them they assisted in preserving the fruit from mildew and decay. Some years ago, when residing in the Isle of Man, I noticed that the Bracken (*Pteris aquilina*) was in large demand for packing the fresh-caught herring forwarded daily by Steamboats to the Liverpool markets; and more recently, during a brief sojourn at Frodsham, in Cheshire, Brackens were collected on the Overton hill to line the hampers of new Potatoes transmitted to the Manchester markets. Upon my return to the north of England, in a year when the Potato disease was threatening the destruction of that valuable esculent, the Rector of a parish in my neighborhood, at my suggestion, induced one of his farmers to 'bog' his winter Potatoes, on the ground where they grew, and to cover them with Bracken instead of the customary straw. The farmer, skeptical about the result, only covered half the 'bog' with Ferns, leaving the other half protected by straw—earthing and sodding up the mound to exclude rain and frost. Winter arrived, and the 'bog' was opened for a fresh supply of tubers, when it was discovered that those Potatoes which had been stored in Brackens were sound and good, whilst those protected by straw were so much decayed as to be scarcely worth the labor of removing. To me this experiment was very satisfactory and suggestive.

That Ferns contain some peculiar preservative property there can be little doubt. Both the Bracken and Male Fern abound in alkaline matter, which was once used by the manufacturers of soap and glass, and their astringent properties are well known to country people, and the dressers of leather. I believe the aroma from this family of plants to be repugnant to most insects, and inimical to the growth of those species of fungi known as mould. I cannot now recall to my recollection ever having seen the larvæ of any lepidopterous insect feeding upon the fronds of our common Ferns, nor do I remember having noticed insects of any orders resting upon them unless it were for shelter during a shower of rain. The peculiar odor thrown off by Ferns must be familiar to all who have wandered near their place of growth. Is it due to an essential oil? The Russian leather, so much prized in this country for its enduring properties and grateful smell, is said to be prepared with oil distilled from the Birch tree, and it has been stated that bales of this valuable leather frequently lie for months in damp warehouses at the London Docks without spotting or being otherwise injured by mildew. That essential oils of all kinds will prevent to a great extent the growth of fungi, we have but to mix a few drops in our flour-paste, and see how long a time we may keep it unattacked by their sporules. Ferns boiled up with our paste would probably answer the same purpose. Hops, also, possess antiseptic properties, and dead game has been preserved in them for a lengthened period without showing any signs of decomposition. The root of the male Shield-Fern (*Lastrea Filix-mas*), when administered in the form of powder or decoction, is a powerful anthelmintic, and is frequently made use of for the expulsion of that pest of our race—the tape-worm. The young unexpanded fronds of this Fern when cooked are said to be equal to Asparagus. Dried Ferns make a most enduring thatch for outbuilding on the farm, and should be largely used for the bedding of all animals affected with entozoic diseases—the pig in particular. If in some parts of Germany and Denmark Beech leaves are used to stuff mattresses in which fleas and bugs cannot exist, I think the poor of our own land might profitably collect the dead fronds of our Ferns for the same purpose, and ensure the same immunity from these midnight tormentors.—H. M., in *Hardwicke's Science Gossip*

New Foliage Grass (*Bromus Schraderi:* Australian Prairie Grass).—This Grass is grown most successfully; it is considered to be far superior to any of the English grasses. When used for green food, the growth is much more vigorous than Rye-grass. One of its peculiarities is that it sends up its seed at a very early stage of its growth, and that is one reason that makes it so much more nutritious than other grasses. The Grass has a very early and quick growth in the spring, and if it will suit our climate (and there is every reason to believe it will) will be found invaluable for early feed. It has already been tried in France, with the following results:—

"A new green crop, called "Brome," has recently attracted much attention, in consequence of the perseverance of M. A. Lavallée. A farmer at Trappes, M. Dailly, has produced 31 tons of green Brome per hectare (or more than 12 tons per acre); M. Benoit, of Asy, obtained 35 kilogrammes from 200 grammes of seed, or 185 times in weight of the seed; another farmer got 74 kilogrammes from one kilogramme of seed. It is claimed for the Brome that it promises to feed three bullocks where two were fed before: a magnificent prospect for the beef cater as well as the beef grower. One great peculiarity of the Brome is its growth during an amount of cold which suspends all other vegetation, thus affording green food for cattle before and after all other sources are cut off, and fitting it peculiarly for exposed situations and arid soils. Some years since a farmer, in the department of Finisterre, received some leguminous seeds from America, and has ever since cultivated the plant with great success; this turns out now, it is said, to be identical with the Brome in question."

[We give this statement as we find it in a London paper. It is curious that a leguminous (pea) seed should prove to be a *grass*, and that an Australian plant should have been received from 'America,' and it will be well if the figures representing the extent of the crop be no more suspicious than the other statements.—Ed. *G. M.*]

Rare Plants at Veitches.—Not to be needlessly prolix, let me glance a moment at a few miscellaneous things of an out-of-the-way character. Decidedly the best of the Weigelas I have yet seen was here—*Stelzneriana*—with flowers half as large again as more common sorts, and color a deeper tint of rose. The Japan *Bambusa*, called Metake, is an ornamental plant likely to succeed well in shrubbery borders, and in the vicinity of lakes and and such-like places. It has a long grassy Carex-like flower stem, covered with golden glumes. *Indigofera flammea* is here luxuriating beautifully, showing itself suitable either for a shrub or wall. *Cytisus scoparius albus* is much the finest and densest bloomer I have seen, and well worthy of general cultivation; so is the beautiful white-flowered *Cistus formosus*, with its five sanguineous spots, and quite hardy. The evergreen *Dombothrium coccineum*, with its trumpet-like scarlet flowers—a charming companion for the Honeysuckle, coming as it does from Chili, should be nearly if not quite as hardy as that favorite flowering plant. Then, of course, who would not grow *Berberis Darwinii*, for it is the most free flowering, and the best of all the small-flowered Barberries. *Tropœolum speciosum* is a fine plant for autumn decoration, and having nice broad leaves looks well throughout the season. I also observed the Californian *Fremontia*, which was growing and flowering on a wall, producing numerous yellow flowers; it is also said to do well as a shrub; for a sub-climber it is a most useful plant. *Rhaphiolepis ovata* must not be omitted as one of the most distinguished of the Appleworts having dense masses of white flowers with pink stamens. *Lilium longiflorum variegatum* is a very handsome form of the longiflora breed, and looked remarkably well, growing in a low pit. *Aralia Sieboldii*, with its fine palmate deeply-incised leaves, has stood out unscathed, and if it can be depended upon, it will be an acquisition; and last, but not least decorative under this paragraph, is *Pentstemon speciosus*, with immense spikes of cerulean blue, and as close as the beautiful Tritoma uvaria.

Rhododendrons, Ghent Azaleas, Heaths, Kalmias, Roses in splendid order, with blooms, such as are not usual this season out of doors, perfect; Hollies of every hue and description, presenting a beautiful variegated appearance, and every other kind of shrub common to a nursery.—*Chronicle.*

Horticultural Notices.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA

The Annual Meeting will be held at the Hall of the Horticultural Society Philadelphia, S. W. corner of Broad and Walnut Streets, on Tuesday, September 26th, at 10 o'clock, A. M. Contributions of Fruit solicited. Wm. Hacker, Sec'y.

AMERICAN INSTITUTE HORT. SOCIETY.

GREELEY PREMIUMS.

We have received the Schedule of Premiums offered by this Society, from the Secretary. The offers are liberal, and well worthy of the attention of Horticulturists everywhere:

The Premiums offered by the *Hon. Horace Greeley* consist of three prizes of One Hundred Dollars each, for the best bushel of Apples, the best bushel of Pears, and the best dish of Grapes (not less than six pounds), of varieties best adapted for general cultivation.

The Premium on Grapes was awarded last fall to the Iona, but from the shortness of the notice, Dr. Grant declined to receive the award, and asked that the Premium be thrown open and decided in the fall of 1865.

The following varieties of Apples and Pears were exhibited and examined last fall, and will not come into competition this year, except from the parties who exhibited the specimens then, viz:

Apples — Hubbardston Nonsuch, Fallawater, Conkling's Seedling, Swaar and Baldwin.

Pears—Bartlett, Lawrence, Duchesse de Angoulême, and Dana's Hovey.

The Fruit for which the Premiums are offered must be exhibited at the 36th Annual Fair of the American Institute, to be held in the large Armory in Fourteenth Street, west of Sixth Avenue. The Apples and Pears must be exhibited in baskets, barrels or boxes, containing one bushel each, and must be placed on the tables on or before Monday, the 18th of September. Varieties which ripen at a later period may be exhibited at the rooms of the American Institute on the second Tuesday of November, and the second Tuesday of December, in competition for the same Premiums.

The following gentlemen, well-known to the Horticultural community, have been appointed a Committee to examine and report upon the varieties exhibited:

Messrs. John A. Warder, *Cincinnati, Ohio.*
Chas. Downing, *Newburgh, N. Y.*
Isaac M. Ward, *Newark, N. J.*
Wm. S. Carpenter. *New York.*
P. T. Quinn, *Newark, N. J.*
Wm. L. Ferris, *Throg's Neck, N. Y.*
E. Ware Sylvester, *Lyons, N. Y.*

Mr. Peter B. Mead will meet with this Committee in awarding the Premium on the Grape.

The Fruit for these Premiums should be directed to John W. Chambers, Clerk of the American Institute, Fourteenth Street, New York, and marked "For the Greeley Premiums." The charges must be paid to the place of exhibition.

ALTON, ILLS., HORTICULTURAL SOCIETY,

The Society met at the residence of David E. Brown, Esq., July 7th, 1865. J. F. Starr in the chair. Minutes read and approved.

The Committee on Grapes reported that they had visited and examined the vineyards in the vicinity of Alton; found most of them in bad condition, occasioned by bad management or neglect. The grey rot had materially injured many, while the leaf roller was doing considerable damage, and increasing. Vineyards where good sun and air are had by position and wide planting, and where proper care has been given to cultivation and a thorough and early process of pinching, were found free, or almost so of any mildew and rot, and had splendid exhibitions of fruit. This Committee will make a careful report at the end of the season, for the information of the Society.

Committee on Flowers made the following report:

"Your Committee report the receipt of three bouquets, from Mrs. W. T. Miller, Mrs. Kingsbury and Miss Eisenmayer. We can only distinguish them as handsome, handsomer, handsomest. That of Miss Eisenmayer contains the greatest variety. Mrs. Kingsbury has displayed the greatest taste in arrangement, but Mrs. Miller has by far the choicest selection of flowers.

"The bouquet of Miss Eisenmayer is composed of French Lilacs, Lachy Vista, Hawly, Mrs. Ellsworth, Quelchi and Belles Vebenas, Coral and Trumpet Honeysuckle, Lady and Fringe Poppy, Yellow Lily, Wax and Corn Flowers, Dog-moss, Asparagus and Snap Dragon. Mrs. Kingsbury—Five varieties of Rose, Blackberry, Lily, Lady of the Lake, Wax-berries, Althea Rosea, Flan, Monkshood, Purple Verbena and Arborvitæ. Mrs. Miller—Six varieties of Monthly Rose, Heliotrope, Pepper and Rose Geranium leaves, five varieties of Verbena, Yellow Lily, Scarlet Bath, Geranium, Lemon Verbena, and Mignonette.

Respectfully, Ione Hull."

Fruit Committee presented the following:

D. E. Brown—Sweet Bough and Early Harvest, both large and fine, Primate—Carolina Red June, extra; Sops of Wine.

F. Curtis—Apples: Red June, Sops of Wine, Alexander, Red Astrachan, Sweet Bough; Pears, Petit Muscat.

W. I. Johnson—Carolina Red June, Early Harvest.

W. T. Miller—Apples: Primate, Early Harvest; Lawton Blackberry.

A. & F. Starr—Early Catherine pear.

E. A. Reihl—St. Louis Raspberry, very hardy and productive, but too soft for market.

S. R. Dolbee—Breda Apricot. Apple: Primate, Early Harvest, Red Astrachan.

Committee would respectfully report the Nutmeg peach, Dearborn's Seedling pear, Sops of Wine, very fine—Carolina Red June, Early Harvest, Keswick Codlin, apples from Jonathan Huggins.

Dr. Long—Currants: Cherry, fine, White Grape, Victoria, Red Dutch; Gooseberry: Houghton's Seedling, ripe and fine; Raspberries: Red Antwerp, Ohio Everbearing, Belle d'Fontenay Seedling, from Dr. Long, large, firm, and said to be very productive; Apples: Early Harvest, Red Astrachan, Carolina Red June, Kirkbridge, White Pear, Madeline.

Dr. Hull—Apricot: Moorpark, Breda, all very fine and free from curculio; Pears: Early Jargonelle, valuable for market, Bloodgood; Cherries: English Morello; Lawton Blackberry; Early Harvest.

Dr. Long, Chairman.

Mr. Huggins was requested to forward the above specimens to Mr. Fitch, of New York.

Committee read the following:

Your Committee beg leave to report peaches canned by Mrs. David E. Brown, in October, 1863. The variety "Lemon Cling," October peach.

Mrs. Brown is very successful in canning fruit, and for the benefit of less fortunate sisters, we append her method:

Gather the fruit before fairly ripe, peel and cut in as large pieces as possible; place in a porcelain kettle with a very small portion of water and stew until the fruit will admit a broom straw easily; have the cans on the stove full of hot water, when about to fill the cans, pour out the water, and set them in hot water, this expels the air; fill, seal and let them remain in the water till cool, keep them in a *cool* and *dark* place. No sugar is used.

Miss Fanny Burges, For Committee.

July 7th, 1865.

On motion, Dr. Hull, was requested to visit the southern portion of the State to examine fruit and fruit trees, and report his observations to this body.

J. G. Brown and E. Hollister, Jr., were elected members. An interesting discussion of the grape was participated in by a number of members.

Wine Committee presented the following:

Committee on Wines report the following on exhibition, of wine, strictly speaking there is but one specimen made of Norton's Virginia Seedling, by Michael Poeschall, of Herman, Mo., a fine specimen of what the Committee consider the most profitable variety of Wine made in the State. A sample of wild grape wine, made by D. E. Brown, Esq., several years old, made by adding sugar to juice of wild grape, very clear, well made, a very palatable drink.

Samples of Currant Wine by Messrs. W. T. Miller and S. R. Dolbee, similar to that examined at June meeting. A bottle of Raspberry Syrup made by E. A. Reihl, very rich, and preserving the Raspberry flavor in a remarkable degree, to be used by mixing with water, and in this way affording a delicious beverage, very valuable in a sick room.

Two bottles of Cider by F. H. Curtis, boiled and bottled hot; and also common cider from the barrel. These, either alone or mixed, afford a pleasant drink and one that every farmer can have, the year around, at small expense and trouble.

Respectfully submitted,

Jno. M. Pearson.

We learn from the members that the apple crop generally will be small. Cherries paid well when carefully grown.

After a bountiful dinner being served, and a social interval enjoyed by all present, the society proceeded to business.

Committee on Investigation reported Mr. Brown's farm generally in good order. He has a fine apple orchard, a very large number of peach trees, pears, cherries and small fruits, besides some 500 grape vines, some of the vines having a good crop of fine grapes. Mr. Brown has a very beautiful farm, most pleasantly situated, and will be made one of the most profitable in the country.

On motion the day of meeting was changed from the first Friday to the first Thursday in each month.

On motion the Society united in a request to Express companies to reduce the price of carrying fruit to proper and reasonable charges.

Next meeting to be held on the first Thursday in August, at Dr. E. S. Hull's residence.

H. G. McPike.

ST. LOUIS HORTICULTURAL SOCIETY.

St. Louis, Mo., May 18, 1865.

Mr. President and members of the St. Louis Horticultural Society:

Business compels me to be absent for a few days, therefore, I cannot be present at our meeting, but I will endeavor to add my experience, little as it may be, and hope to learn many new ideas from the discussions recorded on that day.

SUMMER TREATMENT OF THE VINE.

We might say the whole treatment of the vine, for if we take proper care of our vines through the summer and autumn, they will take care of themselves the balance of the year.

I will give you my mode of handling the vines the first year, after I have planted them on a good piece of ground, plowed 15 to 18 inches deep, and planted about 8 to 10 inches in the hills.

As my ground is marked off with stakes six feet long, I keep the strongest bud and rub off all others. This new cane I keep tied up to the stake. Keep all laterals pinched in to two leaves if your vines are making a vigorous growth, which the Concord and that class of vines will do; let one lateral near the base grow two feet long, and then pinch it in; the lateral will be cut back to one eye in pruning, for a new cane the second year. *Never layer* the first year! I will defend the point that whoever does injures the vine more than it profits, besides it makes poor plants. It is all we should expect of a vine to get well established and ripen its roots well the first year it is planted.

Men that know the formation of trees and plants, tell us that the roots require a certain amount of material absorbed by the leaves to ripen them, as well as the branches require the fluids taken up by the roots; therefore we cannot, without injury, prevent the carbon and oxygen that is taken in by the leaves from descending to the roots no more than prevent the sap from rising to the branches.

Now, if we layer down these branches that contain the leaves, and new roots are formed on *them*, these roots will either absorb the material furnished by the leaves, to the injury of the parent plant, which requires the leaves to ripen *its* roots, or the roots of the layers will suffer by being half matured, or both more or less weakened.

Doubting ones can try it if they wish. I have and can speak from experience.

Pruning is a very important part of vine culture, and right here let us consider the *necessity* of pruning and its *effects*. We prune in summer to prevent too much growth; in the fall or spring to remove all wood that is not needed for fruit.

I hold that this is one of Nature's laws, if we prune in the dormant state of the plant or tree, we excite it to grow; if in the growing state, we check its *growth*.

Therefore, we should not remove any large branches or long grown shoots, in the summer, but should only prune off the terminal buds with our finger nails; never use a knife in summer on the vine; hence the importance of doing our work in time and the next ten days is the time we should put our vines in order. Train your vines in the way they should grow for the next month and they will not depart from it the balance of the season. If we neglect our vines for the coming month and they grow into a thicket, we are compelled to remove long shoots to prevent the vine from being smothered, and we have disturbed the healthy circulation, and checked its growth, and the next thing we see is mildew and *rot* and a faliure of our labor.

Strong growing varieties need special care, to rub off all the extra buds and pinch off the laterals in the proper time, leaving two or three leaves beyond the second bunch of fruit. Do not remove the foliage from the main vine.

In our early pruning we should calculate the amount of fruit a vine is capable of maturing, and remove all the balance. Where there are many laterals leave but two bunches on each, or only one will make finer fruit.

We should cover vines in winter, hence I recommend pruning in the fall after the leaves are all off the vine. Unless you cover vines do not prune until spring.

Pruning has received a large portion of our time heretofore, and we have been taught by those of no small experience that the proper time to remove large limbs from a tree or plant of any kind, is in the summer, when the tree has ripened its terminal buds and has the greatest amount of foliage, and the only reason given for that time is, that the wound or scar heals over quicker. I might add another reason equally as good, that you can cut the wood easier, it being softer then, which is very poor reasoning for a horticuliurist. I hold that removing a large amount of leaves will check the growth suddenly, by taking away so much of the lungs that are supplying carbon and oxygen to the whole structure, and leaves a portion of the fluids absorbed by the roots unappropriated. Better never create the demand for the leaves, then check its growth by removing them. Hence, prune off large limbs and small ones too, in the spring, just before the plant begins to grow, then the work will go on harmoniously, and the wounds will heal in due time. This will take us through the first season with our vines, the second I will give you next time.

Yours, very truly,

J. M. Jordan.

Mr. Walter pinched off laterals twice during summer. Prune with three buds to the spur, because one may fail. Plow the vineyard same as a corn field, and as often as necessary to keep down the weeds. Prunes according to vigor of the vine; on strong vines have as many as sixteen to twenty-five buds. Trench all my ground before planting two and a half feet deep.

Mr. Colman follows the plan generally of Mr. Walter. First year prune to a single cane, get it as strong as possible. Stir the ground if possible after every shower. Must prune so as to get new wood. Old wood never bears twice. Is that not so, Mr. Walter?

Mr. Walter. That is the case. But the stronger growing varieties as the Taylor will do better if trained so as to require neither stakes nor trellis, being supported by the old stalk, often three or four inches in diameter, on the crown of which the bearing wood grows out.

Mr. Bradley has seen vines in Pennsylvania in the same way, being from three to four feet high, and self-supporting.

Mr. Walter. The only difficulty in training in that way is to get spurs for bearing, which must be had or there will be no fruit.

THE
GARDENER'S MONTHLY.
DEVOTED TO
Horticulture, Arboriculture, Botany & Rural Affairs.
THOMAS MEEHAN, Editor.
W. G. P. BRINCKLOE, Publisher.
OCTOBER, 1865.
VOL. VII.---NO. 10.

Hints for October.

FLOWER-GARDEN AND PLEASURE-GROUND.

At this season of tree planting, the earlier the planting is done the better. Where there are a few unripe shoots, cut them back: all trees are benefited by a little cutting back. Those which are easily killed in winter, or usually have the name of transplanting badly, should be more severely pruned than others. Of this class are the Magnolia, Birch, Tulip-tree, Oaks, Poplars, and Willow trees.

Some half-hardy things do better left out, and protected, than checked by being taken up. The Tritoma uvaria and the Pampas Grass, for instance. Work dry leaves in and about the stems, then cover with an inverted box to keep the leaves from blowing away, or getting soaked with rain or snow.

Many shrubby things do very well taken up and set in boxes and kept in cellars: such as Pomegranates, Lagerstrœmias, Oleanders, Fuchsias, Hydrangeas, Oranges, Lemons, and the harder-leaved classes of shrubs.

Many bedding-plants are worth keeping over when extra large specimens are desirable, especially of the bedding Geraniums. Many persons who have moist cellars simply cut off all the leaves and succulent shoots, and after tying all in a bunch, hang them root uppermost to the wall. Where there is danger of roots being too dry for this plan, they may be planted thickly in boxes of soil, and set in the cellar.

Tender plants or shrubs, evergreens or deciduous, that are hardy enough after getting fully established, should be protected 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 Douglassi, 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, Diclytra spectabilis, Phloxes, Delphiniums, etc., 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.

Roses, and many other things which flower from last season's wood, and which wood it is therefore important to preserve, may be saved by having the branches laid down under the soil. The tenderest kinds of Roses may be preserved successfully in this way.

Bulbs, as Hyacinths, Tulips, Crocus, etc., if not already planted, should be at once proceeded with. A very rich sandy soil is the choice of the Tulip and Hyacinth. They should be set about four inches beneath the soil, and a quantity of sand put around each bulb. After planting, a covering of manure may be put over the place of planting, to protect from severe frost. Ground mice—some say moles, also—are at times very destructive to these roots. No effort should be spared to trap and destroy them. It is a very good plan to soak peas in water till they begin to swell, when they should be rolled in arsenic, and buried in different parts of the soil near the beds. All the different kinds of Lilies, including the most beautiful and rare kinds of Japan Lilies, are perfectly hardy, and beds of these are among the handsomest and sweetest adornments of the pleasure-ground through summer and autumn months. A very dry soil does not suit these. A rich and strong loam, rather inclining to dampness, will grow them to perfection.

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 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 have some evident reason for it. 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 be further 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 a view of exciting the curiosity to know "how much more is beyond." Besides the mere purposes of shade from the sun, and screen from the 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. 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 in some cases is 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. Where there is a prospect of a month of growing weather, lawns may still be sown with grass seed, —the clover, where used, to be kept for sowing in April or March next. A small quantity of Rye should be thinly sown with the grass, which, by the shade it affords, will prevent the grass from being thrown out by the frost. The Rye must, of course, be closely cut in the spring, to allow the grass to get ahead of it.

Planting of deciduous trees and shrubs may be proceeded with this month to great advantage, and next month well sheltered from cold winds, wherever the winter is not likely to be very severe. In cold, bleak spots, or where the temperature is likely to be below 15° above zero, planting had better end with November. The risk of loss from fall planting, even in unfavorable places, is much lessened by severe pruning or shortening in.

FRUIT GARDEN.

In planting fruit trees, the Pear, Apple and Cherry invariably do better fall-planted, than when deferred till spring, north of Philadelphia. The Peach, Plum, and Apricot, should not be planted till spring, if not done before heavy frost. All fruit trees when set out should be vigorously shortened in. Trees should not be planted deep—no deeper than they grew before removal. It is better to draw a mound of soil about them for the winter, to be removed early in spring; it preserves from frost and throws off superabundant moisture. Dwarf Pears must be set below the Quince stock—and in selecting these, choose those that are budded near the ground—where a long-legged quince stock has to be buried so deep, the tree makes but a poor growth for some seasons afterwards, and is in other respects injured. In severe climates, Cherries of very luxuriant growth are liable to be winter-killed. To obviate this, the weaker growing kinds, as the Duke and Morello, and the Mahaleb, are used for stocks to graft them on. This checks their vigor, and renders them hardier. It, however, always keeps them dwarf,—and superior sized fruit is not so probable. Where danger of winter-killing exists, these strong growing kinds should not have a highly manured soil, and where they yet grow very vigorous when young, they may be root-pruned, as already described. If they can be got through the first ten years of their life, till they lose their youthful vigor, they will not suffer in severe winters afterwards.

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 by digging a circle around the tree, with the circle made close 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.

Currants, Gooseberries, Raspberries, Strawberries, and Blackberries, can generally be depended on,—and near a large city are always a source of profit. The three first-named like a moist subsoil, and a situation not exposed to drying winds. The Strawberry and Blackberry will do in a drier soil, and warmer situation. The Blackberry has now become and important fruit, but should not be planted where its creeping roots will be an objection. There are always "odd corners" where such plants become just the required thing to fill in with.

The Strawberry, Blackberry, and Raspberry should be protected in winter, north of Philadelphia, most kinds are hardy enough to stand without this care, but it is better to employ it nevertheless. Strawberries may have leaves or straw litter thrown over them, and a little soil thrown over to keep the wind from blowing them away. Raspberries and Blackberries should have their last seasons bearing shoots taken out, the young canes pruned so that three or four of the strongest only are left, and then laid down and covered with soil. To do this without breaking them, dig out a spade full of earth on

one side of the hill, and with the heel press the stock over. The inclination will be sufficient to prevent the breakage.

VEGETABLE GARDEN.

Lettuces sown last month will nowbe large enough to set out for permanent growth. A common hot-bed 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 these parts 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 has been heretofore described.

Roots of most kinds, such as Carrots, Beets, etc., should be taken up before the frost is severe. They all keep best packed in the 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, 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.

Broccoli 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.

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.

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 to the sun's rays, the earlier will the crop be.

HOT AND GREENHOUSE.

The Greenhouse will now begin to look more natural, after having had the stock housed this 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. When necessary 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 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 a thorough watering. Very little fire should be applied to a greenhouse; just sufficient to keep it about 45°; and, speaking of fires, do not forget that the longer wood is near the fire-place the greater is the danger of taking fire: wood in time will become partially charred, and will take fire at times when several feet away from the furnace. Unless very far north, but little fire heat will be required this month.

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.

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 what ought to naturally bloom 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 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.

Many kinds of annuals also come well into play; among other things, Phlox Drummondii, Sweet Alyssum, Collinsia bicolor, Schizanthuses, Mignonette, and Nemophila are essential.

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.

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 doctor it after the old methods.

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 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.

Communications.

DWARF PEARS.

BY SWIFT.

In an article contributed to the pages of the *Monthly*, in the July number, the writer describes a failure in an attempt to bring the Standard Pear into as early bearing as the dwarf, and thus claims for the Pear on quince, what he is not willing to admit for the Pear on pear stock, namely, an early bearing character. The following may be of interest to your readers:

Not more than ten minutes walk from the former nursery of Mr. Saunders, resides Charles Le Boutillier, Esq., a zealous amateur in horticultural pursuits, and a successful cultivator of the Standard Pear as a dwarf. Mr. Le Boutillier has about one hundred trees on quince, planted in November 1853, which are equal to any thing I have ever seen in the way of Dwarf Pears; but as these are evidently showing unmistakeable signs of decay, he is gradually replacing them with standard trees, some of which are already bearing fruit. I subjoin a few notes of some of the trees on pear:

Seckel—Two trees, six feet high, one of them covered with fruit; second year of bearing; five years grafted.

Bartlett—Six feet high, has fifty well-formed Pears on the tree; second year of bearing; five years grafted. All of the Bartletts have more or less fruit on them.

Henry IV—Five feet high, loaded with fruit; second year of bearing; five years grafted.

Duchesse d'Angouleme—Two dozen fruit; five years grafted.

Urbaniste—A handsome tree, six feet high, has six pears; second year of bearing; five years grafted.

Vicar of Winkfield—Height five feet, has twenty pears; second year of bearing; five years grafted.

Flemish Beauty—Has one pear, third year of bearing; five years grafted.

Oswego Beurre—Two trees, seven feet high, have about fifty pears on each, the fruit badly cracked, and the tips of the leaves look as if they had been scorched by fire; five years grafted.

Onondago—Three pears; *Buffum*—six pears; *Beurre Clairgeau*—three pears; these three trees are very small, not more than three feet high; grafted three years.

Any person interested in the culture of dwarf Pears will do well to visit the garden orchard of Mr. Le Boutillier, and judge for himself of the

comparative merits of dwarf on quince and dwarf on pear.

THE ROBIN.

BY W. C. STRONG, BRIGHTON, MASS

A great deal of sentiment, and some poetry, has been expended upon this bird. A plump, domestic, motherly bird, rather noisy, and somewhat prosy and monotonous in his song, he is still a most desirable addition to a country home, when he can be kept out of temptation. But when he comes into the region of fruit gardens, and spells his name with two *b's*, then we find a transformation of character, which requires entirely new treatment. The bird is then seized with a morbid appetite, for which the only effectual remedy seems to be in vigorous doses of small lead pellets frequently applied until the superfluous *b.* is dropped. This prescription, it is true, is "contrary to the statute in such cases made and provided;" and still worse, it is in direct violation of the advice of an esteemed contributor to the *Monthly*. But I submit that nothing short of this can be done. Let us state the case: In the early part of the season, when the Robin has no other food, it picks up such worms and grubs as it may find, prefering the harmless angle-worm to all others. At this season it does an inappreciable amount of good to the horticulturist, for which let the bird have full credit. It is nothing like what some other hungry, meat-loving, songsters do, yet it is something, we freely admit. But the moment generous Mother Earth begins to yield her ripening fruits, then do these dainty epicures "leave all meaner things," and lay arrogant and exclusive claim to all of "the first particular choice."

Probably those who live in regions where the small fruits are not extensively cultivated have no idea of the extent of this evil. If we continue to protect the Robin by law, and raise all the small fruits it may need, it will so increase in numbers as to require the Pears and Peaches in addition to the Grape. In most gardens near Boston, the Cherry is hopelessly given up. Strawberry-beds are defended by small boys or by netting. Raspberries are more difficult to protect, and therefore suffer more. Not to dwell upon early Pears, Peaches, and the like, we come to the Grape, as one of our most prominent fruits. If we could induce the bird to finish up his meal upon a single bunch at a time, we would be content to make this compromise; but the Robin has no idea of binding himself to such a bargain. Not he. He must daintily try them all, and pronounce which is best. I can but respect the bird's taste when he selects such varieties as the Delaware and the Allen, but cries quit whenever he makes an attempt upon Rogers No. 15, or Marion and the like. The difference in quality is too marked to require the services of the Robin as taster. He volunteers to do the whole work, and will leave you no opportunity to educate your own taste. In short, he will take or spoil the entire crop, if allowed a free field. Who shall say, in face of these facts, that he is a friend of the horticulturist? He will not touch the caterpillar; he has no relish for the canker-worm; he is of no service whatever against the curculio; his little work might be done, with a thousandth part of the expense, in other ways. He is a confirmed robber and spoiler. Wherefore, my verdict is, that he be banished from all our fruit-gardens. Fruit-growers have only to protect the bird, and allow him to multiply, to learn that the evil grows to be intolerable.

A GLANCE AT THE FLORA OF THE CARBONIFEROUS PERIOD.

BY DR. HORATIO C. WOOD, JR., PHILADELPHIA.

Read before Pa. Horticultural Society, Aug. 1,65.'

One of the most curious and interesting discoveries of modern science, is that of the vegetable origin of coal. It has become so familiar to us,—we are so used to looking on great heaps of coal, and remembering that ages ago they were formed from vegetable matter,—that nothing can be more trite than this opening sentence. Yet *it is* a wonderful discovery: one that awakened strange emotions in the breasts of the earlier investigators and carried them back, in fancy, to the untold ages buried in the abyss of the past,—to the waving forests and thick brakes of that olden time. In the light of more modern science, the fact is still more strangely interesting, as affording an unanswerable example of the indestructibility of a force. For whence did those plants receive the power to draw the immense mountains of carbon from the air and earth, but from the rays of the olden Sun. It takes no vivid fancy to see in the glowing, burning coal, the sunlight of a day long fled ere man was: for science, stranger than fiction, can actually measure the power drawn so long since from the Sun, and stored away deep in the bowels of the earth, to minister to man's wants. This is not the place to do more than allude to this modern doctrine of the convertibility of force, and its indestructibility. It would be a pleasant task to show how the plant lays hold of the chemical part of the Sun's rays and binds them in its cells, making those wondrous, little entities so many prison houses of force. But our task to night is with the Flora of the Carboniferous Period, and we must hasten on.

Although every school-boy is acquainted with the fact, yet perhaps it would be well to glance for a moment at the proofs of the vegetable origin of coal. Coal is more or less pure carbon. What is the great source of pure carbon to day, laying aside the coal itself, but the Vegetable Kingdom?

If we subject wood, to the action of a slow fire, in the absence of a sufficient supply of air, charcoal is formed, the physical characters of which you are all familiar with. Intermingled with the coal are found small masses of charcoal, closely agreeing in external appearance with that from the "Jersey Pines." Further, in and all about the coal are vegetable *reliquæ* in vast abundance and endless variety: huge trunks, many feet in length; innumerable impressions of ferns; seed vessels, fruits, leaves, roots,—yea, sometimes the stumps of whole forests; and in one or two places on the coasts of Nova Scotia, the forests themselves, standing erect, imbedded in the solid rock. The Coal Measures are, in truth, Nature's herbarium, where she has stored away the history of the botany of a wonderful period,—a botany with strange, weird plants, worthy to grow side by side with the winged Saurian lizards, and huge, uncouth, ferocious sea monsters, which make our largest and fiercest reptiles seem but playthings.

The two crowning, decisive proofs of the vegetable origin of coal, are the following:—First, The fact that if thin slices of it are properly prepared and examined with the microscope, a peculiar structure is visible, so closely resembling that of existent plants, that we often can assert not only the source from which it has come, but even the classes to which the component plants belonged.—Second, The circumstance that the first stage of the formation of coal is at present going on. Of this more will be said after the discussion of the climate and conditions under which the Carboniferous vegetation flourished.

Many things have been said and written about the climate of the Coal Age,—some of them more strange and wonderful than even the truth itself. Men have laid hold of the axis of the earth, and turned it to suit their purposes and theories. The great difficulty lies in the existence of coal in Melville Island, Lat. 75° N. The plants brought from that locality seem to be similar, indeed often identical with those found in our coal measures.

The inquiry at once arises in every thinking mind, how could these plants have lived and flourished in that region of ice and snow,—that home of frozen death: cold winter's favorite resting place. The only plants which now grow there are the hardiest of the *Alpine Flora*,—even the Birch and the Willow are fain to content themselves with creeping along the ground, not daring to raise their heads more than a few inches into that chilling air. But the coal shows that a flora must have existed there formerly worthy to rival that of the tropics in its luxuriant abundance. Whence then the heat and light to foster and nourish such a vegetation? In order to account for the existence of coal so near the pole, Messrs. Lindley and Hutton, two of the most famous investigators in Fossil Botany, invented the monstrous theory, that the axis of the earth had a different inclination formerly from what it has at present. But where in Nature have we any evidence of such gigantic change,—a change which would involve in its influence not merely our globe and its satellite, but all our solar system. Let us then see if it is necessary to overstep the bounds of reason, to explain this problem. That coal could not at present be formed in those regions is self-evident. In that primeval age there must have been more light, and especially more heat there.

What is the great equalizer of the temperature of the earth at the present day? No doubt the air has much to do with the climate. No doubt it is the hot sirocco-breath of the Saharan furnace, tempered by great draughts from the Mediterranean, which gives Southern Europe its genial climate, and ripens the Grape on the banks of the vine-clad Rhine. But is not water a more powerful modifier of the temperature of a country than the air? It is a curious fact, that if you take a pound of water at 60° Fah., and a pound of lead at 60° Fah., and heat them to 120° Fah., you will find that it has taken about twice as much fuel to bring the water to that temperature as to bring the lead up. Again, if you take these heated bodies, and measure the heat given off during cooling, you will find that the water has given off about twice as much as the lead. The thermometer does not indicate the *amount* but the *degree* of heat in a body, and water actually requires twice as much heat as the same weight of lead, to raise it to any given temperature. If you pour on a mass of granite a gill of water, the stone will at once appear wet; but pour a gill of water on a brick fresh from the kiln, and it will all soak into the brick, and, hid away in the interior, will give no token of its presence. The absorbing power of the brick is much greater than that of the stone. So it is with water and heat. The Creator has given to water a great

power of absorbing heat and hiding it away in its interior. Is it not evident how this property fits it for being the great equalizer of the earth's temperature. It is notorious, that in the winter the sea coast is not so cold as the inland, whilst in summer it is not so hot. The reason of this is, that the water absorbs the heat of the one season, and gives it off to moderate the cold of the other.

Glance for a moment at a map, and you will see that the gloomy, frozen coasts of Labrador—the native home of the Seal and the Iceberg—is in the same latitude with the fertile England, with its mild climate and busy multitude of men. The great cause of all this difference is the Gulf Stream, that great oceanic river, ever flowing from the Tropics and stranding itself on Northern Europe. It is made up of millions of drops of water, and each sparkling drop is a little casket with its treasure of heat locked up within it. From the fierce burning Sun of the Tropics it receives it, and hurries away with it to make fertile and inhabitable the western shores of the Old World.

As water is thus the great equalizer of climates, the great distributor of equatorial heat, it is easily seen that if the surface of the globe was almost covered with water, the extremes of temperature would to a greater or less extent disappear. Now geological facts indicate that in the Coal Period the greater portion of the earth's surface was covered with water, and that the land which did exist was low and marshy.

The key to unlock the mystery of the existence in high latitudes of the heat requisite to the growth of the coal plants seems to me to be found in this circumstance. The immense mass of water composing the almost universal ocean, was doubtless traversed in all parts by currents similar to the Gulf Stream, but on a still more magnificent scale,—and these it was which enabled the coal plants to flourish so near the pole. I have said nothing of the possibility of the crust of the earth having been warmed by the inner fires. This may have contributed somewhat to the growth of the Coal Flora, but how much, if at all, seems impossible to be judged.

The problem, how the plants received their supply of light, is not so easily solved. It is, however, by no means settled how far plants can endure the absence of light. According to Prof. Lyell, Palms flourish under glass in St. Petersburgh, 65° N. L., where the shortest days are only five hours long, and seem scarcely more than a glimmering twilight. How much greater departure from their normal supply of light these plants would endure is not known. But this fact certainly shows that they will bear much greater vicissitudes of light than of heat. Further, many of the living congeners of the Carboniferous Flora, flourish in the darkest recesses of tropical primeval forests, where no sunbeam ever pierces through the thick foliage, but where a shadowy twilight is alone filtered through the dark screen of living green. If Palms, used to the burning sun of the desert, flourish in 65° N. L., how much further north can Tree Ferns, Club Mosses, etc., native denizens of gloom, exist? And is it not possible that the ancient flora may have had greater powers of enduring the absence of light than the modern allied families?

But there was undoubtedly more light in those northern latitudes formerly than at present. What is coal but carbon? and these millions of tons of carbon have come from plants which must have obtained them directly or indirectly from the atmosphere. Carbon can exist in the air only as carbonic acid. Therefore the atmosphere must have been in that ancient time very largely composed of that gas. Although this gas is so destructive to animals, yet it is a powerful stimulant to vegetation, and its superabundance must have been a great cause of the wondrous, luxuriant profusion of the Carboniferous Flora.

We know that, owing to the refraction of the atmosphere, the Sun is seen by us when actually several degrees below the horizon. Now the refracting power of carbonic acid far exceeds that of either nitrogen and oxygen singly or associated. In a latitude where the Sun revolves for days a few degrees below the horizon, it is very evident what an effect this great refracting power must have had on the length of the days and nights. What a very prolonged twilight must have existed there. Taking into consideration these two thoughts,—the small supply of light actually necessary to the growth of some plants, and the prolonged twilights produced by the high refracting power of the carbonized atmosphere, is it necessary to imagine that the world has turned a somersault, in order to account for the coal beds of Melville Island.

Although the ocean covered so much of the earth's surface during the Carboniferous Era, yet coal is not an oceanic deposit. No marine remains are found in it, either vegetable or animal. The plants out of which coal is formed must have contained a large proportion of lignin or woody fibre to have yielded so much solid carbon. Now seaweeds have singularly little of this in them. They are mere pulpy, fleshy masses, which, when dried, are but the shadow of their former selves. On the other hand, the coal could not have been produced in a very dry atmosphere, for the Euphorbias, Cacti, etc., which flourish on dry inland table lands, are succulent, fleshy plants, composed very largely of watery juices, with but very little solid permanent tissue. Again, when plants die and fall to the ground in an ordinary forest they gradually decay until all that remains of them is a black rich mold. Decomposition or decay is nothing but a slow process of combustion; and, as in that process, if a plentiful supply of air is at hand, continues until not only hydrogen, nitrogen, and other unstable elements are liberated, but the very carbon itself oxydized. To obtain the carbon by slow decay, just as to obtain it by rapid decay, *i. e.* combustion, only enough oxygen must be present to consume the less resisting, more changeable portions of the wood. The only known method by which this can be done on a large scale in Nature is through the agency of water.

If you examine a log which has lain for years at the bottom of a pond, you will find that, although a similar log on the shore would have crumbled in the same period into mold, yet it is hard and resistant, only blackened by the touch of time. The air has been excluded in great measure from it, and the carbon remains untouched. The Creator, cognizant of this fact, has given a constitution to marsh plants, which peculiarly fits them for the formation of coal. They contain a remarkably large amount of woody fibre. Take the soft pliant sphagnum or bog moss, and delicate as it seems, it actually contains a large proportion of lignin,—will yield more carbon, pound for pound, than the firm, hard giants of the forests.

It has been shown that coal has been formed under water, and this peculiar constitution of marsh plants would indicate that it had been formed in bogs or marshes, and not at the deltas of rivers. This is confirmed by many circumstances, among which are these two:—First, The fact that so many stumps and even trunks of trees are found standing in an upright condition, apparently just as they grew; Second, The immense length and breadth of some of the coal fields, coupled with the circumstance of there having been but so little land in those days, seem strongly to oppose the idea of their formation at the mouth of a river.

It seems certain, upon looking at all sides of the question, that there were immense swamps in the coal ages similar to the famous peat bogs of Ireland and other Northern countries, and that it was in them that the depositions of carbon took place. The top of a peat bog is covered over by a luxuriant living growing vegetation, whilst underneath is an ever increasing mass of dead decaying vegetable matter. The plants which form by far the larger proportion of each of these are the mosses.

Upon examining peat taken from near the surface, it will be seen to consist of a matted, interwoven mass of stems and roots, blackened by incipient decay, but preserving their form and structure. The further from the surface the more marked is the effect of the slow combustion, till at last a point is reached where the form of the component plants are lost and the peat is reduced to a black, carbonaceous, spongy mass. Now this material needs only heat and pressure to form it into coal. It has actually been dug out, dried, exposed to a great pressure and heat, and an artificial coal thus been made.

As impressions and even parts of individual plants are found scattered through the coal, so even in the fully formed peat, portions of many species of plants exist. The moss, however, never retains its structure or form, but is converted into the black, uniform, carbonaceous mass, which constitutes by far the greater part of the peat. No traces of mosses have as yet yet been found in the coal. Does it follow from this that they did not exist in the Carboniferous Era. Much of the coal, when examined by the microscope, does not exhibit any definite structure; and is it not very probable that it corresponds to the structureless portion of the peat in origin as well as constitution, and that mosses flourished abundantly in that ancient flora?

The plants that have written their history most profusely on the coal and surrounding shales are the Ferns. Everywhere are their traces visible. Sometimes a single frond, nicely smoothed out as though pressed for a herbarium; again, great piles of them, the fronds crossing, recrossing and intermingling with one another in endless confusion. Although, as has just been indicated, the abundance of structural *reliquæ* is an index rather of the indestructibility of the plant, than its pristine profusion, yet it cannot be doubted but that the filices held a very prominent place in the Coal Flora: their appearance must have been very similar to the tropical ferns of the present day. There are found imbedded in the coal huge trunks which have their surface fretted with very large, more or less semilunar scars. By means of the microscope, Messrs. Lindley and Hutton have been enabled to demonstrate that these were the trunks of immense Tree Ferns. The ordinary frondose ferns were apparently much the more abundant then, as now.

Mr. Corda, some years since, described some pe-

culiar *reliquæ*, which he called Psaronius. These are very abundant in some localities; they are always in the form of a short, thick stump, with a thick, hard bark, whose surface is covered with a dense mass of rootlets. These, according to Prof. Lesquereux resemble, both in external form and internal structure, the short root-stalks of some of the immense ferns of the Island of Java.

The study of fossil ferns is environed with almost insurmountable difficulties. Very rarely is the fructification sufficiently well preserved for any characters to be drawn from it. In the hundreds of specimens which I have examined, there has not been one such. The student is forced back on the form of the fronds, and the distribution of the nervules, both for family, generic and specific characters. For this reason, there is scarcely another study in Natural History so uncertain and unsatisfactory. Different portions of the same plant often belong to different sub-orders.

The most strikingly beautiful of all impressions left on the coal are those made by the Lepidodendra. These plants were more closely allied to the Lycopodiaceæ or Club-moss family, than to any other living plants. The living representatives of this family do not attain to above a few inches in height, generally trailing on the ground. But not so with the lepidodendra of the Coal Age. The remains of their trunks are often 20, 30, and 40 feet, or even more feet in length, indicating the immense size to which they attained. They must have been a very striking feature of that ancient flora, very probably forming in some places groves themselves, in others mingling with the conifers and tree ferns.

All through the Coal Measures are found in abundance sections of peculiar, long, cylindrical stems. These are remarkable for being articulated, with their joints very close together, and surrounded by a sheath, mostly formed of acute, closely set teeth. Their surfaces are generally caniculate, the channels or grooves often alternating at the joints.

These fossils are the Calamites of systematists. On account of their external resemblance to the existent Equisetaceæ or Horse-tail tribe, they have been considered as allied to them. But recent investigations have revealed more truly and completely their history. The microscopical examination of their stems has shown that they were conifers; and the discovery of their fructification has confirmed this curious revelation. A peculiar form of vegetable *reliquæ* has long been known to be abundant in the Coal Measures, especially where the Calamites appear to have flourished. They consist of minute stems or branches most generally, but not always, simple, and beset at short intervals with whorls of linear, single nerved leaves. These leaves resemble more nearly the awl-shaped foliage of our Pines than that of any other existing plant. Now the perfected fructification of these plants has been discovered. It consists of compressed, apparently monospermous nutlets, which are generally more or less acute, often encircled by a narrow wing, and always situated in the axils of the whorls. The male flowers have also been found. They are terminal ear-like spikes, of appressed scales, enclosed in a mass of united appressed leaf-like bracts. These vegetable remains are the Asterophyllites of Brongniart. Various theories have been advanced as to their botanical relations, all founded on the premise that they were distinct, perfect plants. But these have all been disproved by the recent discovery that they are nothing but the branches of the calamites. According to Prof. Lesquereux, these calamites were probably annuals, or, at least, short-lived plants, which grew up very rapidily. As they grew, they gave off constantly towards their summits these branches. The individual branches soon died, and were at all times easily detached from the parent stem. In the more perfectly preserved calamites the little scars left by them can still be seen around the joints. These stems probably grew in rich marshes, and very close together, forming, like the bamboo of India, or our own southern cane, almost impenetrable brakes. The constantly shed branches and decaying falling stems, covered the surface of the marsh in which they grew, and furnished much carbon to the accumulating peat. Intermingled with the asterophyllites are found vegetable *reliquæ*, somewhat similar in appearance to them, but which are still thought to be the remains of separate plants. I refer to the Annularias and Sphneophyllums. These are jointed branching stems, with verticillate leaves at the articulations.

The leaves are not so strictly linear as those of the asterophyllites, and are very generally more or less wedge-shaped. A good deal of mystery still hangs about their botanical affinities, but Prof. Lesquereux considers that they were plants living on the mud; now partially immersed in the water, again running over the surface, much as the existent Ayola caroliniana. On the other hand, their fructification has been discovered, and so much resembles that of the asterophyllites as to suggest immediately that they, like the latter, were merely the branches of some huge coniferous plants.

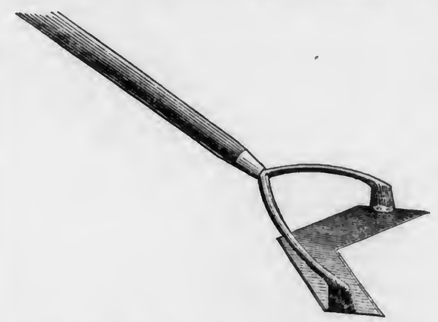
No plants of higher organization than the conifers have as yet been found in the Coal Measures.

A NEW HOE.

BY MR. P. B. MEAD, NEW YORK.

Mr. Editor: When I get hold of a good thing, I like to call my neighbors in to enjoy it with me. I have as little faith in selfish enjoyment as I have in selfish men: both are to me anomalies.

I think I have a good thing now; and, with your permission, will tell your readers what it is. Being some time since in the store of Mr. Alfred Bridgman, my attention was attracted by a curious looking implement, painted red; in fact, it was the red paint that first drew my attention. On examination, this curious implement proved to be a *hoe*. Inclosed, I send you a sketch of it, which you might have engraved for the benefit of your readers. At first



I thought it had been made "wrong end foremost;" this, however was not so: still, I am inclined to believe that it might be made "both ways" with advantage. It will be seen that the hoe is in the form of a wedge, both the front and back edges being sharp. It thus has a double motion, or, in other words, a 'pushing' and a 'draw' cut, which enables one to get over the ground very rapidly. From the form of the hoe, the *cut* on both sides is a draw cut, like that of a knife: the very best that can be used. The wedge form, too, while it presents a very large cutting surface, causes the hoe to enter the ground and pass under the surface with a comparatively small expenditure of power. It will naturally be inferred, on looking at the engraving, that the 'draw' motion of this hoe is easier than the 'thrust;" and this is the case.

I have used this hoe during most of the present season. It is decidedly the best thing of the kind I have ever used; so good, indeed, that I am unwilling that others should remain in ignorance of it. At first I thought it was just a little awkward, as many others may; but I soon got the "hang of it," and then it worked like a charm. I use it with both motions, back and forth, and am astonished how rapidly I get over the ground. The 'draw' motion is admirable. I am sure I can do twice as much work with it as I can with the common 'pushing' hoe, and do it easier, if not better. With the draw motion I can cut down with ease weeds so large that I can not budge them with the common hoe. To be precise, I can take down 'Smart-weed,' 'Rag-weed,' etc., 12 to 18 inches high, with comparative ease; and this, too, where they grow thick together. If an amateur can do this, what cannot a good stout gardener do, with his muscular arms? Of course, nobody should let weeds of any kind grow to such a size; but they will sometimes in spite of you, especially in a season like this; and then it is well to know that there is an implement that will cut them down like grass. This it does because of its draw cut.

Another advantage possessed by this hoe is, that you can cut close up to a row of plants without danger of cutting them off. The points on the lower side pick out the weeds nicely from between and around the plants, and thus save much stooping and hand work. I could go on and enumerate other advantages which I have found this hoe to possess, but I think I have said enough to induce some of your readers to get the implement and give it a trial. I have been so much pleased with its operation, that I may perhaps be a little enthusiastic in its praise. Be this as it may, I cannot help regarding it as the best hoe I have ever used, and have not the least hesitation in recommending it to others.

The maker's name I do not know, his card having been worked off the hoe I have; but I understood Mr. Bridgeman to say that only a few were made for trial, and these all of one size. If this should meet the maker's eye, I would suggest to him that he make the handle longer: it is now too short. He should also make at least three sizes, 6, 8, and 10 inches wide. The present one is 8 inches, which is too wide for much work to be done in the garden. Let him by all means use the best of steel. Excuse me for taking up so much of your room. I hope, however, that it will do something to abate the 'weed' nuisance.

FAMILIAR BIRDS.

BY J. P. NORRIS.

VII.—THE BARN SWALLOW.

The Barn Swallow (*Hirundo horreorum*) is one of our best known birds. Arriving as it does among the earliest of our birds, it is considered as one of the harbingers of spring, and is loved accordingly.

With the arrival of the Barn Swallows, we associate the arrival of Spring—Spring with its flowers, green grass, birds, and a thousand other delights which we associate with the name.

Swallows of all kinds have always been considered friends of man. Even the greatest haters of birds have been unable to find any injury or theft which they can charge them with perpetrating; so that when they take up their abode with us, they meet with a cordial welcome, and are never destroyed excepted perchance by some vicious person who would fain improve himself in "shooting on the wing." Did they really afford this it would not be so bad, but it does not follow that a person who can shoot every swallow that comes sailing past him can drop a Partridge, for all birds do not fly in the same manner.

The Barn Swallow is a sociable bird, preferring the habitation of man to its native wilds. There can be little doubt but what this bird originally built its nest in caves, etc., but now it has embraced the superior facilities for raising its young offered by the civilization of man.

This Swallow generally arrives in the Middle States in the last week of March or the first of April, sometimes, however, it is later. We first notice them arranging their plumage, and in a few days more they begin to construct their nests. This is usually placed on, or adhering to, a rafter of a barn or some other out-building, and is generally constructed so as to be under the shelter of some projecting beam. The nest is in the form of an inverted cone, with a perpendicular section cut off where it joins the rafter. At this point it is much the thinnest. It is constructed of pellets of mud, which the birds form at a neighboring creek, and carry in their mouths to the chosen spot; and layers of grass, which are interposed between the layers of mud. The hollow of this inverted cone is filled up with grass, and on the top of this are laid feathers. In this soft receptacle, the female deposits her eggs, which are usually four or five in number, and of a white color, covered all over with brown spots. In two weeks the eggs are hatched, and now the young Swallows keep their parents busy supplying them with insects. The number of insects destroyed by a single Swallow in a day is almost fabulous. Certain it is that they are ever on the alert for their prey, and thereby greatly befriends the farmer and horticulturist, while no harm can be laid to their charge.

PEAR IN THE WEST.

BY J. H. S., QUINCY, ILLINOIS.

I send you to day a small box of Pears, which you will please accept as an expression of the kind regards of Western Illinois for one who has largely aided her in the incipiency of her horticultural efforts.

The seeds of the Peach, the Pear and the Apple planted by the early settlers along the banks of the Mississippi, found a generous and congenial soil. They grew and flourished, and yielded immense crops of fruit, which for years in the absence of any thing better, satisfied the simple wants of the pioneers within the last ten years. However a new spirit has been infused into the people: they have learned that good fruit is as easily produced as that which is poor, and much more easily eaten.

The samples sent you are mostly from the orchard of Mr. E. Dudley, whose farm adjoins the City of Quincy, and who has been one of our pioneers in the cultivation of the finer fruits especially the Pear. He now realizes in common with others of the like occupation, that it pays even to raise *Dwarf Pears*. Mr. Dudley has in his orchard on Fern Bluff, over two thousand Pear trees, most of them Dwarf; the oldest of which were planted in the Spring of 1858, and from some of them he has this year taken 2½ bushels of fruit, such as I send you. Notwithstanding they have produced such a bountiful crop of fruit, the trees are healthy and vigorous, and in this respect would compare favorably with any orchard in the country.

I mention particularly the orchard of Mr. Dudley, not because he has been more successful than others, but because his case shows that fruit culture in this section is a success, and because having visited his grounds I can speak understandingly.

Our soil and climate are equally well adapted to the Apple, Peach, and Grape, especially to the latter, of which large plantations are made; and from those which are old enough, large crops are realized. The Delaware now regularly appears in our markets, and when the present crop ripens very considerable shipments will be made to other points, as has been the case for years with Apples and Peaches. We hope the day is not distant when the Horticultural interest of Western Illinois shall rise to a generous emulation of those of the more favored sections of your own noble State. The beginning is auspicious, may the consummation soon be realized; for in Horticulture every effort brings a blessing, and rivalry begets no jealousy.

[It gave us much pleasure to receive the box of superb fruit,—many of the varieties so very fine as

to be scarcely referable to their proper names. Obliged as we are by the fruit, we are also grateful for the complimentary expressions accompanying it. That the *Monthly* has been so useful we attribute chiefly to the enthusiasm of our contributors, who keep us so regularly supplied with facts for "our people." We have all the foreign journals regularly on our table, but in none of them is the correspondence so liberal as that which gives worth to our *Gardener's Monthly*; and we would share with our friends the honors of success.

While on the subject, we wish even more could be induced to write us of what they see and learn. We know many modest men of great intellectual accomplishments, whose weakness it is to suppose they are 'learners,' 'ignorant,' and know only "what every one already knows." Few of us but have heard of what we already know, but told in another way to what we have heard it, it starts new trains of thought, which to all of us is as useful as if what we read were new.—ED.]

APPLICATION OF SULPHUR AND PREPARATION OF SILICATE OF POTASH.

BY PROF. J. C. BOOTH, PHILADELPHIA.

[The following has been kindly handed us for publication by Mr. D. R. King, President of the Pennsylvania Horticultural Society.—ED.]

The subjects which your queries open are very wide, and I am sorry to say that no satisfactory answer can be given, of a practical, working, character, simply because of our ignorance. For example, we cannot perceive why manure water should have caustic effects, except that it may be used in a too concentrated state.

Soluble Silicate of Potash could be made on a large scale, and at a moderate expense; but its solution should be used in an *excessively* diluted condition, because it is almost as caustic (chemically speaking) as Caustic Potash itself. In like manner Pearlash-water should be employed in an extremely diluted state. How dilute the *excessive* or *extreme* should be, I have no data for saying; but a few small experiments, carefully made, ought to determine. In my ignorance, I would say a pound in 100 gallons of water, as a preliminary experiment, and not used too freely at that: for one gallon would contain nearly 3 grains of Potassa (Caustic Potash).

The Sulphur question with Grapes is a very nice one, and I have thought a little on the subject. I do not believe that sulphurous (burning sulphur fumes), or sulphuric acid can have the same effect as sulphur itself; although sulphurous acid fumes may have a somewhat analogous effect. Thus both sulphur and sulphurous acid are advantageously employed in cutaneous disorders, and the diseases of plants must bear some resemblance to those of animals. But I am inclined to think that the physiological effects of sulphuretted hydrogen and sulphur would be similar. Therefore, since sulphur is usually in the solid state (powder or lump), and its diffused or diluted vapor cannot be easily controlled and employed, I would suggest the use of a compound, which will gradually give off a sulphuretted odor. You have supplied the hints of such a combination in your letter. If lime and sulphur-water be boiled together, you obtain a sulphuret which will gradually decompose in the air evolving the odor, which I allude to. I do not think it necessary to brush it on the flues, or to warm it, for its decomposition takes place spontaneously in the cold. I have wished to have this substance tried upon trees, by boring them and inserting it in the bore in Spring, to ascertain whether it would not expire or transpire by the leaves, and drive off insects. I proposed this to myself years ago, but the constant drive in my occupations has prevented my trying it. For the last purpose the article should be made dry, and not in the liquid form.

I do not know whether the few hints I have given will prove of any value, but you will perceive that they are not wild conjectures. Experiment based on theory is the best road to reach truth.

MOISTURE IN PLANT HOUSES.

BY E. FRYER, NAPERVILLE, ILLS.

The interior arrangement of very many Plant-houses is such as to render it difficult to keep up the amount of moisture in the atmosphere that is necessary to the successful growth of plants. This is particularly so in houses where staging and high shelving are erected for plants in pots to rest on. For plants growing in a high temperature, a clear roof and a moist atmosphere are essentially necessary to a healthy condition. Where the foreign Grape is grown under glass, the effects of a dry atmosphere is most easily observed. Under a temperature of 100° to 110° if moisture is not applied to the atmosphere of the house, and abundantly so to the roots. Scorched or burnt leaves are the result; this is more particularly where pot culture under a clear roof is practiced. These burnt leaves are sometimes, perhaps most generally attributed to a different cause, namely, drops of water resting on the leaves of the plants. I have proved this idea erroneous. In one of the warmest days of the

past month (July). I have so fixed a number of leaves of Grape vines growing in pots in a low roofed unshaded house, as to hold from 20 to 60 drops of water each: put the water in them at mid-day, marked them, and watched the operation for over an hour, and the result was no injury whatever to the leaves on which the water was placed, it all evaporated without leaving even a mark. The thermometer in the house was 106°.

Most gardeners are adverse to the use of the syringe excepting at morning and evening. My conviction is that it is perfectly safe to use the syringe in the full glare of sunlight, provided the moist condition can be maintained, and no drying operation allowed to take place immediate after. An excessive dryness to either roots or branches is sure to produce burnt leaves on the Grape vine and other species, and shrivelled, dried up, sickly specimens of flowering plants. Many fine Camellias and Azaleas are lost by being being placed on dry open shelving, exposed to the full sun in the spring months without the necessary provision for sufficient moisture.

Whoever saw burnt leaves after a shower succeeded by immediate sunshine on trees or shrubs in the open air at any season? Blighted leaves may be there, but they are due to other causes than a refreshing shower.

The leaves of plants are known to absorb gaseous matter, but do not absorb moisture, hence in applying moisture by syringing or otherwise, the the principle object is to furnish a supply for the waste or excessive drain on the roots by the leaves, which are continually evaporating from their surface, to provide an aerial sea in which they can float while in a growing condition. This element is furnished by nature, and we can provide it even more completely under artificial circumstances,—under a glass roof.

No class of Horticulturists seem to provide so fully all the conditions necessary to to the growing plant as the Commercial Florist. These consist of a low-roofed house, and a bank of earth, or benches covered with earth or other such substance, instead of bare open shelves to set the pots on; the latter is artificial, unnatural,—the former is the nearest approach to the natural condition.

Again, the writer has practiced watering at all times of the day during summer, and found the plants just as healthy as if watered according to rule; and there are are few gardeners or florists who have not sometimes had occasion to do so. An excessive moisture is not advocated, for this will produce nearly the same results as a deficiency; neither is it advocated to change the system or time of syringing or watering as practiced by gardeners generally; but simply to show that it is perfectly safe—even advantageous—to change it to suit the requirements of plants at particular seasons.

THEORY OF DEW.

BY B "YOUNG CONTRIBUTOR," PHILADELPHIA.

To me, Mr. Editor, the philosophic contemplations which gardening suggests, is one of the chief pleasures of its pursuit. I love the flowers, and I enjoy the fruits,—the beauties of the landscape have no more ardent admirer; and the songs of the birds, with the whole round of attendant garden charms, always receive from me their well-deserving mead of praise. But to me the mental discipline is more than all,—and I have no doubt other of your young readers share similar feelings with me. I ask, therefore, a few lines of space for a a discussion of the proper *theory of dew*. The following I clip from a magazine, and is, I think, the generally received account of its formation:

"THE CAUSE OF DEW.—You may have noticed the deposition of moisture on a pitcher of ice-cold water on a summer's day; and in this familiar fact we have an illustration of the simple provision by which, during even the long months of summer, the plants receive a partial supply of water, sufficient at least to sustain their life. The explanation of the dew upon the pitcher is very simple. The layer of air in contact with its cold mass is rapidly cooled, and when it can no longer hold all the moisture it contains, the excess is deposited in drops on the surface. Exchange now the pitcher for the earth, and you have an explanation of the immediate cause of dew. After sunset the earth, like the pitcher, cools down the layer of atmosphere immediately in contact with it to such a degree that the whole of the vapor can no longer retain its aeriform condition. As a necessary result a portion is condensed and deposited on the surface, and this is what we call dew.

But, it will be asked, what cools the earth so suddenly after the setting of the sun? for this is not so evident as the cause of the coldness of the pitcher. The earth, as we have previously stated, is moving with immense rapidity through a space whose temperature is very greatly below Fahrenheit's thermometer; and, like a heated cannon-ball hung in the middle of a cold room, it is continually losing heat by radiation. The dense atmosphere with which it is enveloped acting, as we have seen, like a blanket, protects the earth, to a certain extent, from the intense cold of space; but still the constant loss of heat is so great that, were the sun's rays withheld for a few days, the temperature of the surface land, even in the tropics, would fall as low as it now is at the poles during the long night of the Arctic winter. In the day time the earth receives from the sun more heat than it loses; but when this great supply is temporarily withdrawn, the loss of heat continues as rapidly as before, the surface becomes quickly cooled, and the deposition of dew follows; or, if the temperature falls below freezing point, the dew is changed to frost.

We have all noticed that the most copious depositions, both of dew and frost, takes place on clear nights, and that during cloudy weather this supply of moisture is less plentiful, if not entirely withheld. The reason is, that while the earth loses heat by radiation, the clouds, intercepting the heat-containing rays, that would otherwise be wholly lost, reflect them, like a mirror, back to the earth. A shed or any other protection spread over the ground acts in the same way."

The condensation of moisture on the pitcher, by the warmer air coming in contact with the cold body of the pitcher, is, of course, readily understood; but I do not think the parallel holds good in regard to the earth. Since reading the above extract, I have tried with the thermometer the heat of the ground before sundown, soon after sundown, and some time later, by bringing the bulb just slightly under, and can find no perceptible difference. Towards morning there is a little difference, but scarcely any worth noting, while the dew commences to generate immediately after sundown.

There is another point which I have observed, namely, that besides the different heat degrees of the two currents, there must be some degree of suddenness to the condensation of moisture on the pitcher. For, after the first deposition of moisture has been made and stood awhile, if we wipe the moisture dry from the pitcher's surface, *no more moisture* will form, although there may be several degrees of difference between the water in the pitcher and the air about it. There may possibly be some electrical condition connected with this suddenness which is a mystery at present. And so with dew. We find many a night when there is no dew, and yet the sun's absence, and the clear sky, should allow of as much cooling of the earth as on the most dewey night; but no dew forms, owing as I opine, to the want of the electrical condition I have supposed.

That the evolution of heat is in some way connected with the formation of dew is undoubted; but the theory generally received is unsatisfactory to me, and in the hope that some one may give us a clearer one, is the object of these remarks from a Young Contributor.

RAISING GLADIOLUS FROM SEED.

BY H. A. D.

There is no flower attracting more attention, and deservedly so, at the present time, here as well as in Europe, as the *Gladiolus*. Through hybridization, numberless new varieties are produced, excelling the older ones. To the amateur or professional florist, a rich field is open for improving these gems of the flower-garden, by the propagation of seedlings. It may be perhaps of interest to some of the readers of the *Monthly* to know my method of producing flowering bulbs, in one year from seed. The seed must be sown early in the autumn in shallow boxes, in a light sandy soil, and in a few weeks time they will appear like small blades of grass. Water carefully to prevent them damping off, and upon the approach of cold weather, remove to the greenhouse, and keep in a growing condition during the winter. About the middle of February, begin to water sparingly, and by the close of the month allow the soil to become perfectly dry; allow the bulbs to rest in this condition until about the middle of April, then prepare a frame with a slight bottom heat, on which place about six inches of rich sandy soil, then remove the small bulbs from the boxes, and plant them singly, in rows, about one inch apart, and four inches between the rows. Cover with sash, keep moderately watered. After they are above the ground, and the weather permits, accustom them gradually to the air; and, as soon as there is no more danger of frost, remove the sash. They will now require no further care than watering during dry weather, and keeping clear of weeds. Many of these bulbs will begin to bloom by the 1st of September. Out of quite a number that have bloomed this season, treated as I have described, I have not had an indifferent flower, the seed having been selected from such choice varieties as Bertha Rabourdin, Le Poussin, Vesta, Reine Victoria, and others of this class.

Our climate appears to be peculiarly adapted to their growth, and with one-fourth the care bestowed upon them that is devoted to their cultivation in France, we might become independent of them for new varieties.

The after treatment of the bulb is precisely the same as with all of this class: as soon as the tops become dry and there is danger of the ground freezing, they should be lifted and dried off in the air, and placed in a dry cellar secure from frost, and planted out the ensuing spring in the garden in beds, labelling and describing them as they appear in bloom.

The Gardener's Monthly,

PHILADELPHIA, OCTOBER, 1865.

☞ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

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VIGOR AND HARDINESS.

We took occasion recently to remark, on some suggestions of Dr. J. Stayman on heat in relation to color, with some observations of our own on color as it affects hardiness. Our attention has again been called to the matter by some very suggestive ideas thrown out by an intelligent correspondent of the *Prairie Farmer*.

It has been received as an undisputed truth, that very dry seasons, by maturing growth, are favorable to hardiness through severe winters; but it is evident that this is true only where death by frost is caused by actual bursting of the cells through the expansion of frozen sap.

The writer of this article took occasion some years ago in a paper prepared for *Hovey's Magazine*, to show that there were two ways in which death by frost occurs,—one mechanically through the expansion of cells by the frost; the other, and evidently a very distinct way, by the loss of the plant's moisture through evaporation. Of course the generation of heat and evaporation of moisture are contemporaneous,—where there is no evaporation there is no heat.

Keeping in view these two sources of death by cold—that is by disruption of tissue—and by simple cessation of the heat-producing power, it is easy to understand that in some cases extra vigor in summer may be against the plant's hardiness; while, so far as that vigor aids the heat-producing principle, it will rather assist.

We may, we think, take it as a fact, that what we call a good season for producing fruit-buds, is one wherein we may expect the greatest mortality among our half-hardy trees and plants; and if this can be fully proved, as we think it can, we shall have some guide in advance as to how far we may prepare to protect them.

Fruitfulness is inconsistent with vigor and longevity. We dwarf Pears and Apples to check their growth, which throws them into early and productive bearing condition,—granting, at the same time, that the tree is 'short-lived' thereby. We do not "plant dwarf Pears for our heirs." We ring branches of the vine and other fruit trees, to ripens the fruit early; they are large: but the branch dies the following season. We plant on poor soil, and the tree bears largely of small fruit; but when we plant the same kinds on rich soil, it gives us only a very small number of large ones. Or if we pinch back often the strong summer's growth, or in any manner interfere with vigorous growth, we produce fruit at the expense of life. Every Grape-grower knows the consequence of letting a plant over-bear when young.

And thus it is that a tree, maturing its wood during a dry season, though secure against that beath which arises from bursted cells, is endangered by having its vital force impaired by being thrown into a bearing condition, either prematurely or immoderately.

The very color of such trees is indicative of their weakness. A tree which bears well always has a paler hue than one which does not; and the fruit which retains its dark color longest is invariably the best. A sick tree sheds its yellow leaves early, a healthy one keeps its dark green foliage to the last; and the early ripening Apples or Pears are never so good as those which ripen in their own due time. Even the magnificent colors of our forest foliage in in fall is accompanied by early maturity. European trees rarely have beautiful fall foliage, but they do not mature their leaves till the frost as it were drags them off. And so for longevity: while the English Oak will "brave for a thousand years the battle and the breeze," few American trees will live over one hundred years.

It is strange how every decade or so we have to revolutionize our ideas about the right and the wrong of things. There was a time when it was believed that to starve the body meant the strengthening of the mind; like Conrad, who though

> "A stranger to the grosser joys of sense
> His mind seemed nourished by that abstinence."

Now a sound mind is considered inseparable from a sound body, and physical development, brought about by generous living, and liberal exercise of all the material faculties, is the order of the day. So with plants: poor soil, slow growth, dry air and dry treatment was the law for long-lived plants. The man who fed his orchard ruined the long life of his trees. Those who let them alone had not as much timber, but more of the "substantial fruition of his hopes,"—and so it went, so it was said.

But the true line is between all these extremes.

Over feeding, as in over abstinence, will produce disease and short lives; but good dark green foliage, and fair vigorous growth, are evidently not at all inconsistent with any sound theory of perfect hardiness.

IS THE QUALITY OF FRUIT CHANGED BY HYBRIDIZING?

This question has often been asked by horticulturists, who have an idea that melons and squashes are injured in the quality of their fruits by being grown near each other. Of course, if they hybridize together, the seeds from such hybrids produce fruits different from the parent; but it is not generally supposed that the quality of fruit is injured the first season before the seed resulting from the hybridization is properly matured.

For ourselves, without being satisfied that there is any *material* change in the quality of the fruit, we cannot deny that there is some; and there may probably be much more than we at present imagine. Every one knows that the varieties of Indian Corn hybridize readily with each other, and that such hybridization is apparent in the ear. In Sweet Corn grown near the yellow ears, the grains of the latter are found of a yellow color. If the quality of the seed is thus known to change, it is quite possible the fleshy matter surrounding the seeds, and which go to make up what together we call "the fruit," may undergo some change also.

At any rate, we think we may take it for granted, that melons grown near squashes often have a suspicious squashy flavor, that gives some ground to the popular theory of 'mixing,' and it is well worth close investigation, whether it is really a fact or not. If it is found to be a truth, we shall have a good explanation of many circumstances which have been a puzzle to us for a long time, namely, how the same fruits come to vary so much in quality in the reports of different observers. For, if the pollen of one variety have any effect on another so as to affect the same season's quality of the fruit, the law will not confine its operations to pumpkins, squashes or corn, but extend to the whole region of fruits, from the Apple and Pear to the Strawberry and Grape. A pistillate Hovey's Seedling Strawberry, for instance, fertilized with the pollen from a Burr's Pine, will not be exactly the same flavored Strawberry as as if the Hovey were fertilized with an Albany Seedling,—and even the fruits of hermaphrodite plants—the Pear or Grape, for instance—which at times get their own pollen injured, and have to depend on more favored kinds for fertilizing influence, may be operated on in the same way.

We think there may be some such law, and should be glad of any observations of our readers that may serve to enlighten us.

50,000 DOLLARS REWARD.

A Philadelphia gentleman sends us the following note, which explains itself:

"Why don't you suggest through your magazine a National subscription for a fund, as a reward for the discoverer of a certain preventive of the ravages of the Curculio. A good plan would be for the different Horticultural Societies throughout the country to get up lists of subscribers to such a fund. I will engage to supply ten names for $25 each. In this way I think $50,000 could easily be engaged, which might possibly rid us of this pest."

We believe there are standing offers to very large amounts, made by various bodies during the last few years, and that many claims have been made for the offers; but to our mind none of the offers have been made in the right way. Remedies are asked for, and the claimants ask for 'Committees' to prove their claims. We would have these parties furnish their own proofs, and let Committees be asked to decide whether the facts warrant the claim.

We would put the offer something in this shape: $50,000 for one-quarter acre of Plums grown entirely free from Curculio, in a locality where it is well known Plums cannot be grown on account of the "little Turk." This would be much better than the old way of inviting some long-winded communication from a closet Philosopher, asking for a set of industrious men to try his cerebral crankums, and to report after they have labored on his secret nostrums for three or four years or so.

The offer for a specified block or number of trees of Plums, loaded with fruit, would also be more likely to produce good results than any other course. Men frequently get good ideas on the spur of the momont, which are usually forgotten; but with the trees on hand, there would be a perpetual reminder, and also a personal inducement to study his subject, independently of the reward which is to back up his success.

We throw out these hints, not doubting but that the members of our various Fruit and Horticultural Societies can mature some plan that would in all

probability result in the accomplishment of a very successful end.

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.

Pear Culture—*C. F. S., Palisades, N. Y.*—"Since 1859 a subscriber to your valuable *Monthly*, I to day beg to address you a few lines about my Pear plantation, which I began planting in that year, and about which I am very anxious to get the advice of so thorough a practical and theoretical horticulturist as you are known to be. Thankful for any kind answers you may give, I will state my case:—I began, in 1859, planting, beside other fruit trees and 3500 vines, 1750 dwarf and 575 standard Pear trees. My location is on the Hudson River, opposite Dobb's Ferry, 22 miles from New York, on a plateau about 100 feet above the tide-water; sheltered on the West and Northwest by the Palisades, and exposed Southeast. On the slope of the Palisades is the vineyard. Soil rich sandy loam, on most places mixed with vegetable mold; loose and porous, underlaid with gravel and sand. The Pear trees consist of 25 varieties,—400 Duchesse, 400 Beurre Diel, 500 Louise Bonne, 300 Vicar, 200 d'Anjou, 100 Belle Lucrative, and the balance in smaller lots,—they are planted 10x10, have been well attended to, summer and winter pruned, and form now large healthy pyramids, rather wide at the base, it being my purpose to keep the trees low, so that they may be when 10 feet high about 5 feet wide. The soil being rich, they have been but sparingly manured, and that only in the form of bone-dust and ashes. The ground under the trees has been worked by a cultivator, as often as wanted, and part of the ground was last year sown in Buckwheat, which was cut down and left on the ground when in bloom; this year all has been sown in Buckwheat, to be cut when blooming, with the exception of a slanting lot, which gave much trouble in cultivation, and has been laid in grass and clover, which is to be cut and left on the ground.

The trees planted in 1859 began bearing in '63, and produced about 200 Peach-baskets of splendid Pears, mostly Louise Bonne and Duchesse, some Howell and Belle Lucrative. Last year they blossomed quite freely, but ripened only some 250 baskets. Last winter they were full of fruit spurs, and therefore I concluded to give them, in early spring, 4 tons of bone-dust to 8 acres of land. In spring every tree was a bouquet of flowers; and now, after the blossoms have fallen, there is only little more fruit set than there was last year. Now what is the cause of this disappointment? The trees are samples of health and strength, not too much wood on them, every leading branch garnished more or less with fruit-spurs, full of blossoms in spring, and now only so few Pears set! Part of the trees were headed in last July, but there is now no difference between those of July and those March pruned. About half of the Vicars on a poorer soil have nicely set, which might lead to the supposition that the others were yet too vigorous for fruiting. Of Louise Bonne only the smaller trees have well set; the 10 and 12 feet high ones are nearly barren of fruit.

Having made fruit-raising a business, you may conceive how disappointed I feel.

Of the newer Grapes, I value Roger's No. 1 very high: large bunches, large berries, green, with reddish cheek, sweet, tender, of fine peculiar flavor, lacking acid, ripening with the Isabella."

[As we desired to answer our correspondent at at once, we give his note in full in this place, in the hope that the matters referred to may receive the attention of skilled Fruit-growers elsewhere.]

What is a Grass?—"*Quid*" enquires if "Clover is to be properly considered as a grass, as a recent article in the reports of the Department of Agriculture treats of it under the head of grasses. I maintain," says he, "it is not, while a friend argues that it is to be classed as such, though not perhaps botanically."

[We took occasion to remark on this curious article, some time since, in reference to the remark of Mr. Newton's, that "our hot dry climate was unfavorable to British grasses," when all our best grasses are British. We did not think Clover was anywhere considered a grass, either botanically or 'otherwise;' but our National Agriculturist has probably better means of information. The following extract from a Southern journal serves to show, at any rate, that the Honorable Isaac is not alone in his opinion:

"A colored preacher arose, and announced his text as follows:

'In de fust pistol ob Clover, and two hundred and ninety-fust werse—'

'Hold up, Doctor!' shouted one of his hearers, 'you've got on de wrong book—you mean de first pistol of Timothy, I s'pose?'

The preacher hesitated with a very profound look and said:

'Well, I must cave in dis time, tho' I knowed dat the text was somewhere among de grasses.'

The Basket Worm.—We have received the following note from Mr. J. Stauffer:

"On page 275 of your *Gardener's Monthly* for September, you say, respecting the Basket-worm, Mr. Jacob Stauffer first described this insect some twelve years ago, in the *Penna. Farm Journal.* I would beg you to correct it, since, although I may have known the insect that long, and written upon it, I am by no means the first, nor do I make any such pretensions; and from whence you draw the inference I am not able to surmise.

I state this from sense of duty I owe to myself, not to appear under false colors. I want no credit for any thing but what justly belongs to me, besides, older writers on the subject may find objections to such a statement.

Perhaps I stated in my letter that S. S. Rathvon wrote about it in the *Farm Journal*, twelve years ago.

[Our correspondent is not in any way responsible for the error, which is entirely attributable to a slip of our memory as to names.

"Domestic Intelligence."—Our friends of the *Agriculturist* are not satisfied with the lecture they gave us last month, but have added a sort of postscript this, in which they tell how they are "not as other men," but are as distinct a genus as the fungus is from the tree on which it feeds. In its own words, it says, "for ourselves, we generally have more original matter than we know what to do with, and seldom copy from others."

We are very sure we could give our readers "original' matter at far less labor and expense than we now bestow in collecting *facts* for them, especially if we were to follow the rehashing process *once* so popular.

Our estimate of the American mind is that it prefers a journal for the *facts* which it communicates, rather than for the *opinions* it propounds, however 'original' these may be.

We last month expressed our respect for the merits of our contemporary: but we did not mean by this to insinuate that their "original matter" was of any more value than the 'Domestic' and 'Foreign Intelligence,' with which they so exultingly compare it.

Lennig's White Strawberry—*A. S. F., Brooklyn, N. Y.*, writes:

"Can you tell me how the three white varieties of Strawberry came to have their names. I had always supposed that the White Pine-apple was the old *Ananas* of the French catalogues, but I may be mistaken. In my beds at Brooklyn, I thought there was a marked difference in the three varieties; it might have been owing to the richness of the soil, and they may all prove to be the same. My beds this summer look very much like it."

[*Lennig's White Strawberry* was raised by an amateur in Germantown, and distributed freely by him to his friends at a time when the *Albany Seedling* was in everybody's garden. Neighbor got 'Albany's' from neighbor, and as many had been trying the 'White' these got around with them. Those who knew nothing of the 'White,' after a while found "a new seedling" coming up accidentally amongst thier Albany's, and hence the White Albany originated in many *a score* of gardens here. A few 'Pomologists' also found them. One—the Editor of the Germantown Telegraph—named it the '*White Pine-apple*,' without knowing any thing about the "Ananas of the French catalogues." A Committee of the Horticultural Society of Pennsylvania also 'found' it, and they named it '*Albion*,' and this is how it came to have "all these names." Lennig's White is the proper name. Here the pistils are imperfect, and it can bear no crop of any account; and if it "bears abundantly" anywhere, as it is said to do in some New York catalogues, it will be one of the best evidences of the changeability of the sexes in Strawberries we ever heard of.]

Japan Trees and Plants.—"*Quid*" writes: "While asking you about grasses, I may inquire further about Japan trees. On the authority, I think, of the *Gardener's Monthly*, I assert that Japan trees do better in this country than in their own. My friend opposes this view also, and instances the Hydrangea, which here gets killed down every year; and which he thinks it is not likely to do in its wild localities in Japan. His view is that all plants are especially created for the places where they are found, and where, consequently, they will do better than they will elsewhere."

[We cannot say things will *do better here than in Japan*, but many things certainly do grow with a vigor and luxuriance we should judge they could not excel in their own native soil. Take Forsythia, Wiegelia, Paulownia, etc. Japan is a pretty vari-

able climate, according to its varying latitudes.—About Pekin the thermometer seldom goes below zero. In the north it is much colder, and plants from the north may do better here than plants from the South. With respect to the Hydrangea, does "Quid" even know it to be a native of Japan. It has been found only in cultivation there and in China, and no one knows where it grows in a native state.

As to natural laws of locality. It is mere assumption that nature has made things perfect for us to follow all her ways to the letter. We would rather advocate the opposite extreme, that every thing was made wrong, and that the province designed for us as rational beings, was to find out and set things right. Certain it is that in every country the most flourishing trees and plants are those which come from abroad. In England, Italian grasses give the best hay crops; in our country English grasses are the best. Even with our own farm crops, the farmer finds it to his interest to change his seed occasionally. Instead of things getting *used to the soil*, the soil in time rather rejects them. So with our staples. The Sugar cane originally came from China; but it found a better home in the West Indies. The Potato of South America found itself most at home in Ireland. The Melons of Asia are beaten now-a-days by the Melons of New Jersey. Larger crops and better Coffee are obtained from Brazil than from the Eastern shore of the Red Sea, where it originally sprang from; and the superior excellence of the Cotton as raised in America, is too well known to need more than a bare reference.

Our idea is that reason was given to man in order that he might prove all things, and hold fast to that which is good; and that things were made so far imperfect that he might have scope to exercise that reason in.

CRACKING OF THE GRAPE—*A Subscriber, Philadelphia.*—"I have in my cold Grapery a White Gascoigne grape-vine, which, last year and this, has fruited very well, but the berries crack badly. Can you tell me the probable reason, and if there is any remedy?"

[Most gardeners attribute cracking in the Grape to some disease of the roots; but how this is accomplished is not well understood. Some grapes with a delicate constitution are more liable to crack than others. See that the roots are healthy. They may be in a low, cold subsoil,—raise them carefully; or they may have the surface roots destroyed by cultivating the ground, in which case discontinue the practice, and mulch with rotten leaves and coarse sand. Sometimes, in the best regulated borders, a sudden cold rain may injure the young fibers sufficient to cause a temporary check to the circulation of the sap; and if this should occur at the critical time when the fruit is swelling, in spite of the best precautions, cracking may follow.]

BOX CUTTINGS—*J. M. Harrisburgh, Pa.*—"Please state in next *Monthly* whether dwarf Box can be propagated to advantage from slips, in August. I have seen a statement somewhere that it could be in *any other* month."

[The young wood in most instances would be too soft in August, and wither away too badly to recover. In September and October, or in November if protected from drawing out in winter by a slight covering, it does perfectly well.]

PEARS FOR NAME.—From *Mr. Stewart, Quincy, Ill.*—In the box of fruit, referred to in another column, we noticed a pretty rosy-cheeked variety, marked "sent for name," which is the old Frederick of Wurtemburg.

D. B., Philadelphia.—1 Beurre de Capiamont, 2 Swan's Orange or Philadelphia Orange, as it is often called; 3 St. Germain, 4 Late Catharine. You must be mistaken, we think, in the impression that the first is from a "very old tree," as, from our experience of "old kinds" grown about Philadelphia, this one is of too recent introduction. The grafts have probably been set on the old tree within the past 15 years or so. Certainly, these Pears are of that variety. We should like to know if there is an absolute certainty that this variety has been one of these "old trees of probably 50 years."

G. W. T., New Brunswick, N. J.—The Pear was decaying when opened, and not recognizable.

BLISTERED GLASS—*A Young Subscriber, New York.*—"I have the care of a lean-to Grapery, in which the glass is so full of blisters that half the foliage is burnt by end of July. What would you recommend to remedy the defect?"

[If there be but few squares, it would be best to take these out and replace with good ones; but probably it will be best to give the whole glass a thin painting of Sugar of Lead ground in oil."]

CATAWISSA RASPBERRY.—*C.* says, and we quite agree with him: "How is it we hear so little in these days about the Catawissa Raspberry. To my judgment it seems one of the most valuable fruits of any kind or class we have."

PLANTS FOR NAME—*J., Chicago, Ills.*—1 Tweedia cœrulea, 2 Franciscea hydrangæformis, 3 Asclepias longifolia, 4 Kennedya monophylla, 5 Fabiana imbricata, 6 Manetta cordifolia, 7 Santolina pubescens, 8 Cissus discolor, 9 Tradescantia discolor, 10 Malvaviscus mollis all rather common greenhouse plants.

J. C. S., DesMoines, Iowa.—Clematis virginiana.

THE MAILS.—We have frequently stated in these columns, that when the *Monthly* fails to reach the subscriber, it is *wholly* the fault of the mails. The publisher hands us the following note from Mr. Saul, of Washington, showing an instance of how he is often scolded by our subscribers, for "not having sent the *Monthly* this month:"

"Your letter to our city Postmaster I received with my mail this morning. The *Monthlies* I received on the 23rd, the day he must have received your note,—they were doubtless in the office all the time, though they were enquired for daily."

OBITUARY.

HENRY P. BYRAM.

We are pained, though not surprised, to learn of the death of this gentleman, which occurred at Sag Harbor, Long Island, on the 6th ultimo. Mr. B. was formerly editor of the *Valley Farmer*, for some years Agricultural Editor of the *Louisville Journal*, and subsequently an occasional correspondent of the *Rural New-Yorker*. He had been an invalid for several years, suffering much from a bronchial disease, and was in the 62d year of his age at the time of his decease.

SIR W. JACKSON HOOKER.

This truly eminent man, to whose exalted character and energy so much of the present popularity of Botanical Science in England is owing, died on the 12th of August, at Kew, in his 80th year. We abstract the following notice of him from the London *Gardener's Chronicle:*

William Jackson Hooker was born at Norwich on the 6th of July, 1785. His father had a collection of rare and curious plants, which was well known amongst amateurs.

He received his education at the High School at Norwich, under the tuition of the celebrated Rev. Dr. Foster. Having inherited, through his godfather, William Jackson, Esq., an ample competence in landed property, he determined to devote his life to travelling and to scientific pursuits; while, with a view of qualifying himself to superintend and improve his estates, he resided for a time with Mr. Paul, a gentleman farmer living at Starston, in Norfolk, where, however, his whole time appears to have been devoted to Natural History. Being a keen sportsman, he formed a fine collection of the birds of Norfolk, which was rendered more valauble by many close observation of their habits; and becoming very intimate with Messrs. Kirby & Spence, Alexander Macleay, the Secretary of the Linnean Society, and other distinguished entomologists, he also devoted much of his time to entomology. About this time he became acquainted with Sir J. E. Smith, the most eminent British botanist of his day; and having himself discovered the Buxbaumia aphylla, one of the most curious and rare of British Mosses, which he took to Sir James. He was by him encouraged to commence the study of that science which afterwards became the main pursuit of his life. In 1806, when he came into possession of his estates, he seems to have given up every thing for Natural History; he made extensive botanical tours in the wildest parts of Scotland (including the Orkneys, Hebrides, etc.) accompanied by most of the distinguished scientific men of the day.

In 1809 he visited Iceland, which he extensively explored, making large collections in all branches of Natural History.

In 1810–11 he made extensive preparations for accompanying Sir Robert Brownrigg to the then little known island of Ceylon, of which the latter was appointed Governor; for this purpose he sold his estates. His arrangements, however, all came to nothing.

In 1814 he made a botanizing expedition into France, Switzerland, and the north of Italy. which extended over a period of nine months.

In 1815 he married the eldest daughter of Dawson Turner, Esq., of Yarmouth, and settled at Halesworth, in Suffolk, where his house at once became the rendezvous of British and foreign botanists, and where he commenced the formation of that great Herbarium which is now the finest in the world.

His first botanical work was that on the British Jungermanniæ, which was completed in 1816. This, which is a model of skilful microscopic dissection and accurate description. is further unrivalled as an example of first-rate botanical engraving: the drawings for it being prepared by Sir William's exquisite pencil, and afterwards etched on copper by W. C. Edwards, at great cost. The "Muscologia Britannnica" was published in conjunction with Dr. Taylor, in 1817, and was followed by the "Musci

Exotici." These, and other works, added to an increasing home and foreign correspondence, fully occupied his time for the next five years of his life. Meanwhile his property had been rapidly deteriorating, and with an increasing family he found it necessary to look out for some remunerative scientific employment. He was therefore advised by his friend Sir Joseph Banks, to accept the then vacant Regius Professorship of Botany in the University of Glasgow, which, although not a medical man, Sir Joseph was able to procure for him. In 1820 he accordingly removed to Glasgow, the emoluments of the chair being 50*l.* as salary, and under 60*l.* for sudents' fees.

His life at Glasgow was entirely devoted to Botany; he rose early, and went late to bed; he visited but little, avoiding society except on his occasional journeys to England; and devoted the whole powers of his mind and his pencil to his favorite science. He was a most popular lecturer, his class being sometimes attended by as many volunteers as medical men; he encouraged his students in the pursuit, by taking them on excursions, by giving them rare plants from his duplicates, and by furnishing them with letters of introduction to all parts of the world when they went abroad. He kept up a close connection with the officers of the Admiralty, Treasury, and Colonial Office; and it was mainly through his exertions that botanists were so frequently appointed to the various Government expeditions of that period. His agreeable manners, and intimate knowledge of all parts of Scotland rendered his house an attractive resort for scientific and literary men.

During the 20 years he resided at Glasgow, he published his "Flora Scotica," in which the plants of a great part of the British Isles were for the first time arranged according to the natural method; the "Flora Exotica," and (in conjunction with Dr. Greville) the "Icones Filicum;" also the "Botanical Miscellany," the "Journal of Botany," the "Icones Plantarum," the "British Flora," the "Botany of Ross', Parry's, Franklin's, Back's, and other Arctic Expeditions; the "Flora Boreali-Americana," and (in conjunction with Dr. Arnott) the "Botany of Beechey's Voyage," and various other works of standard authority. In 1826, he commenced the authorship of the "Botanical Magazine," which he carried on for nearly 40 years. His Herbarium in the meantime was rapidly becoming the finest in Europe, mainly owing to the indefatigable correspondence he kept up with all parts of the world, and to the number of trained Scotch medical students who, when seeking their fortunes in foreign countries, continued to send him plants, even up to the day of his death. Latterly his salary from the Crown was increased to 150*l.*, while the other emoluments of the Professorship amounted to about 700*l.*; the number of students having increased from 21 to upwards of 100.

During his residence in Glasgow, he was twice offered knighthood, which he accepted from William the Fourth, in the year 1836; this honor being bestowed on him in consideration of his scientific career, and the great services he had rendered to Botany. So much for his professorial career in connection with Scotland. In 1841 he was appointed to the Directorship of the Royal Gardens at Kew. *(To be Continued.)*

Books, Catalogues, &c.

The Catalogues of our nurserymen are again accumlating on our table. and tell their wonted tale, both of business enterprise and horticultural progress and improvement. We think the enterprize of those nurserymen who get out good catalogues is not appreciated as it ought to be. We have one before us of excellent character, accurate in its nomenclature, and correct in its general descriptions, which the proprietor tells us cost him 25 cents each; and which he assures us comes up to 10 per cent of the whole amount he received from sales of that particular branch since the list was issued. This is a heavy amount to circulate 'gratuitously,' though of course it is part of the 'advertising account:'

Of the very fine catalogues we have received this year, are following Descriptive ones:

Jas. Vick, Rochester, N. Y. Hardy Flowering Bulbs, Illustrated.

Geo. W. Campbell, Delaware, Ohio. Hardy Native Grapes.

S. H. Purple, Columbia, Pa. Roses.

L. C. Bauman, Germantown, Pa. Roses.

J. C. Plumb, Madison, Wis. Evergreens, Vines, Shrubs, and Fruits.

D. D. Buchanan, Elizabeth, N. J. General Nursery Stock.

H. A. Dreer, Philadelphia, Pa. Directions for growing Pansies.

J. A. Nelson & Sons, Mercer, Pa. Fruit Trees.

Prince & Co., Flushing, N. Y. Strawberries.

W. Parry, Cinnaminson, N. J. Small Fruits.

A. S. Fuller, Ridgewood, N. J. Small Fruits, Shrubs, and Vines.

B. K. Bliss, Springfield, Mass. Dutch and Cape Bulbs.

Ellwanger & Barry, Rochester, N. Y. Ornamental Trees, Roses, &c.

Hoopes & Bros., West Chester, Pa. Fruit and Supplementary Ornamental Catalogues.

R. Buist, Sr., Philad'a., Pa. Greenhouse Plants.

J. M. Jordan, St. Louis, Mo. Fruits, Plants and Flowers.

Thomas Meehan, Germantown, Pa. Greenhouse Plants, Ferns, &c.

R. & W. M. Peters, Newark, Del. Fruits and Ornamentals.

E. J. Evans & Co., York, Pa. Fruits and Ornamentals.

A. Bridgeman, Broadway, N.Y. Kitchen-Garden Seeds.

W. Brown Smith, Syracuse, N. Y. Fruits, Vines, and Plants.

R. G. Hanford, Columbus, Ohio. Florists' Flowers.

Henderson & Fleming, N. Y. Florists' Flowers.

G. Marc, Astoria, N. Y. Roses.

Brill & Kumerle, Newark, N. J. Agr'l. Seeds.

A. Bennett, Pittsburgh, Pa. Roses, &c.

Haines & Hacker, Cheltenham, Pa. Fruit and Ornamentals,

J. M. Thorburn & Co., N. Y. Seeds, Bulbous Roots, &c.

E. & A. Bauman, Morrisania, N. Y. Deciduous and Evergreen Trees, &c.

W. W. Beebe, Dubuque, Iowa, Essay on Orchards.

F. Trowbridge, Milford, Conn. Fruits, &c.

E. Sanders, Chicago, Ills. Roses, Verbenas, &c.

F. Parkman, Jamaica Plain, Mass. Hardy Ornamental Plants.

John Saul, Washington, D. C. Dahlias, &c.

With so much to commend in all, there is yet a point in some we have to condemn. They get up a handsome catalogue, and to save a piece of wrapping paper, fold over one leaf of the cover instead. This, of course is torn in opening, and as the catalogue lies about with its torn cover, it soon gets caught up by somebody and destroyed altogether, under the impression that "that old torn thing is of no use."

WHOLESALE LISTS OF

A. G. Hanford, Columbus, Ohio; Edgar Sanders, Chicago, Ill.; Wm. Bryce & Co., Glasgow, Scotland, (Seeds); Mahlon Moon, Morrisville, Pa.; Edward J. Evans, York, Pa.; Francis Brill, Newark, N. J.; D. D. Buchanan, Elizabeth, N. J.; John Saul, Washington, D. C.; Frost & Co., Rochester, N. Y; Hoopes & Bro., West Chester, Pa.; J. W. Bailey, Plattsburgh, N. Y.; A. C. & G. T. Fish, Rochester, N. Y.; H. E. Hooker & Co., Rochester, N. Y.; Hooker, Farley & Co., Rochester, N. Y.; M. P. Wilder & Baker, Dorchester, Mass.; E. Moody & Son, Lockport, N. Y.; S. Moulson, Rochester, N. Y.; T. C. Maxwell & Bro., Geneva, N. Y.; John Murphy, Agent, Dansville, N. Y.; John Best, Agent, Utica, N. Y.; Thos. Wright, Rochester, N. Y.; J. L. Darlington & Co., Agents, West Chester, Pa.; Joseph Kift, West Chester, Pa.; T. D. Ramsdell & Co., Adrian, Mich.; O. B. Maxwell & Co., Dansville, N. Y.; Hammond & Newson, Geneva, N. Y.; Daniel Engle, Marietta, Pa.; Dingee, Conard & Co., West Grove, Pa.; G. Meisner, Richmond, N. Y.; J. B. Reeve, Shelbyville, Ill.; Bronson, Graves & Selover, Geneva, N. Y.; Robert Douglass, Waukegan, Ill.; James M. Price, Media, Pa.; E. Williams, Mont Clair, N.J.; Parsons & Co., Flushing, N. Y.

New and Rare Fruits.

LARGE SECKEL AND DUCHESS PEARS.—"I have sent you by Express—pre-paid—one small package, containing a few Seckel and Duchess de Angoulême Pears. Please accept as a token of regard for your labors in the *Monthly*. The Seckel we think are very nice to be raised in our "mountain county."—W. L. AKERS, gardener to D. J. Morell, Johnstown, Pa."

[Though not "new or rare" in the variety, such fine fruit is "very rare" about here. Three of the Duchess weighed 2 pounds 4 ounces; and 6 Seckels weighed 1½ pounds.

We may add, that this kind "Souvenir" is the *first* box we have received for two years on which we have had to pay no charges, although in many cases, and perhaps all, for aught we now believe, have been paid in advance. We shall have have some thing more to say of these Express frauds next month.]

VANBUREN'S GOLDEN DWARF PEACH.—"I send for your inspection two specimens of the Van Buren's Golden Dwarf Peach, which were grown on trees that have been cut up considerably for buds, and were not standing in a very favorable position. The trees are not four feet high, and these two specimens were picked off within twelve inches of the ground. The growth is peculiar, and entirely different from the ordinary peach: foliage large,

thick and leathery; trees remarkably healthy, no indication of disease, and retain their foliage long after the other varieties.—H. A. Dreer, Philad'a."

[The fruit is large, quite equal in size to the drawing sent us originally by Mr. Van Buren (see page 53, 1861); but the color is not as fine as that represented in Mr. Van Buren's original drawing. It is a yellow-fleshed cling-stone.]

The Ellisdale Raspberry.—Amongst some plates of "Rocky Mountain fruits," sent us by Mr. Thompson, we were struck with the appearance of this Raspberry, and have had the following illustration engraved from the plate for insertion in our paper, as we think too much attention cannot be given to Native Raspberries, as they prove so much hardier and prolific than foreign sorts. In time, no doubt, they will be improved so as to compete

favorably with foreigners in flavor also. We wrote to Mr. T. for some account of the fruit, and the following is his reply:

"Your favor is at hand. I would say, the Ellisdale is a Raspberry of large size, fine flavor, a great bearer, hardy—grows about five feet high, and then droops off and grows very long. It may not be considered a creeper; but if the vines are allowed to run on a trellis, get very long and make most splendid show. I have canes this season's growth now larger than your finger. It was found on an old farm in Iowa, and is entirely distinct from any other. It will not grow from the ends of the shoots, and suckers very sparingly."

Apple from West Milton, Ohio.—Enclosed I send a couple of apples—*seedling* of my own raising; *reproduced* from a fine *sweet seedling* in this vicinity, and whilst it retains the *fine flavor* of its parent, there is some *improvement*, I think, in *form* and *size*, and the tree is hardier and more spreading in its habit of growth. It fruited first in 1859, *nine years* from the seed. I am not certain whether it will bear a *full* crop *every* year—if it should, it will do more than is general among the finer kinds. It is full, however, this year, whilst all around us (in Southern Ohio) the Apple crop is nearly a failure.—L. S. Mote."

[Very good fruit, and distinct from any kind we know.]

The Wiest Pear.—A correspondent from Tyrone, Pa., writes:

"We are now eating a Pear which is so excellent and never-failing here that I should like to see more said about it. It is the *Wiest*, a plain green fruit of medium size, unexcelled by any Pear here in the quality of its flavor, its delicious juiciness, hardiness, and certainty of production. It begins to ripen Sept. 1, and lasts into October. Its pure green color does not change as it ripens, and there is therefore no indication to allure boys to the tree."

New English Strawberry—*The Lady*.—It is ten years since Mr. Underhill introduced "Sir Harry," which is now declared to be the most valuable variety at the present time in England.

The Lady ripens about the time of the "British Queen," and continues fruiting a long time; is a great cropper, bearing a large handsome fruit of a salmon color, tinged with crimson, and ripening to the very end; the seeds are small and few, the flesh is very juicy, and melts in the mouth; the flavor is between a Pine and a Melon, and is most delicious, with the highest perfume ever met with. The entire crop is of large size, no useless fruit being produced, and it is as good a forcer as the "Sir Harry."

New and Rare Plants.

Phalænopsis Luddemanniana (Rchb. fil.)—Three varieties of this species are now before us, all coming from Mr. Luddeman. The type already described is no doubt a glorious plant. One variety is much more delicate in growth, and has much narrower stripes of cinnamon on the white ground of the sepals and petals, the amethyst color being confined to their very base, forming a triangle. Both lip and column are amethyst. We propose to call this variety delicata. A second variety has the texture of the original form, grows as large as it, but is highly curious from having all the stripes of the sepals and petals of a light ochre color. We propose for it the name of var. ochracea. The apex of the labellum in this species is subject to such remarkable and highly curious variations, as would induce many botanists to propose several new species. We have seen it entire, three-lobed with obtuse lobes, and three-lobed with sharp toothleted lobes. A most careful comparison of all our material has persuaded us that the two species with which this was compared (*supra* p. 410) are really very different. P. sumatrana, Korth., and Rchb. fil. (zebrina, Hort. Bog.) has a fringed anther-bed, a saddle-like anther with a tumor in the centre, and none of the small numerous filiform teeth between the posterior divisions of the lip. P. violacea, Teijsm., and Binn., has the sepals keeled on the outside, and a dilatate lobulate apex to the lip, without any hairs. P. pallens, Rchb. fil., a much smaller thing, has, according to a sketch for which we are indebted to Dr. Lindley, an oblong bidentate alate at the base of the lip.—*Gardener's Weekly*.

A Yellow Hybrid Perpetual Rose is reported to have been raised by the well-known cultivator of seedling roses, M. Lacharme, of Lyons. In a letter just received from a rose tourist, we are informed that this is sure to give satisfaction on this side of the Channel, the form being good, and the petals of good substance; the color bright yellow, changing to pale buff. We trust this will not prove a companion to the famous "blue rose" which a French raiser produced some years ago, and which had in it just enough blue to make the

red with which it was mingled a dirty tone of slaty purple. Lacharme's name and fame, however, go a great way, and with a large majority of rosarians will for the present be sufficient.—*Gard. Weekly.*

BEST NEW ROSES.—The first prize for six trusses of a new Rose sent out in 1863–4 or 5, was adjudged to Mr. Keynes, for six blooms of *Prince Henri de Pays Bas*, a very bright crimson, full and globular in form, and *Duchesse de Morny;* the second to Mr. Cranston, for *Madame Boutin*, and the third to Messrs. Paul & Son, for *Madame Victor Verdier*, a vivid carmine, and reckoned one of the finest Roses of last year.—*Cottage Gardener.*

CYPRIPEDIUM CONCOLOR, *Parish M S.; Bateman in Bot. Mag.* t. 5513.—The history of this plant is as yet recent. It was discovered Feb. 13, 1859, on limestone rocks in Burmah, by the Rev. C. S. Parish, who sent a drawing of it to Sir William Hooker, as also a wild flower, dried Feb. 1864, which we were kindly allowed to examine. Both show, what we have long since known, that well-managed Orchids are often much finer in our stoves than in their original habitats. More than a year since, Messrs. Low & Co. imported living plants, under the name which we are anxious to see attached for ever to the plant, from a feeling of courtesy towards the assiduous discover. It is a little plant with the well-known glaucous green leaves of old C. venustum, spotted purplish beneath, and covered with dark green markings on the upper side. The flower itself, standing often two together on a short peduncle, is very large for so small a plant, measuring nearly five inches in circumference. It is very distinct from all the related species, in having elliptical blunt petals, such as are found in the American plaited-leaved species, C. spectabile, and passerinum (though not so broad). The color is a very pallid ochre-yellow, with many little dark purple specks, most aggregated towards the middle line of both sepals and petals. A dark yellow stain marks the centre of the staminode, whose posterior limbs are purple. Let us add that the sepals have a copper-brownish hue outside. The species has neither the showy colors of Cypripedium Hookeræ, nor the curious forms of C. Lowii, Stonei, or Philippense, and yet it is so very striking that it must be admitted to every collection. No doubt, as Mr. Bateman so happily suggested the other day, those who have no space for a general collection of Orchids, may at least grow the Cypripedia.—*Gardener's Chronicle.*

YUCCA SCHEDIGERI, remarkable for its free production of loose white curly fibres, and which proves to be one of the hardiest of the race. This last note will perhaps surprise some cultivators who have seen it perish under cool treatment, but the case is easily explained. There are in the country two Yuccas nearly alke, though easily distinguishable. They are both described and sold under the name *Schedigeri*, but the true Schedigeri happens to be comparatively hardy and quite safe in greenhouse temperature, and uncomfortable in the stove; whereas the counterfeit requires stove treatment, and when kept too cool, begins to die downwards from the crown, and unless removed to warmer quarters, perishes outright.—*Gard. Weekly.*

NEW PLANTS AT HENDERSON'S IN LONDON.—*Anopteris glandulosa*, a New Holland shrub of the Escallonia family, handsome, elliptical, and serrated leaves, produces in September large terminal racemes of white flowers, which in general aspects are Rhododendron-like. This thrives in a cool greenhouse, and is a fine subject. *Anthurium leuconeurum*, not long since introduced, and hence usually seen in a small state hitherto, may be seen here in its full stature, rising four feet six inches to the upper part of the leaf. *Croton pictum* in flower, and none the better for it. *Stephanotis floribunda*, trained to the roof in a house with Dipladenia splendens and other fine climbers. The Stephanotis runs about thirty feet, and is in rude health. Last year they cut from it more than two bushels of flowers. It is growing finely now in a temperature of 70°. *Dipladenia splendens* is not extensively known. It has leaves like Hoya imperialis, and produces huge blossoms. *Rhododendron ciliatum*, a variety producing pure white flowers, is grown abundantly in the Erica house; it is invaluable for display at this time of year, and indeed from Christmas to May, according to treatment. *Acer polymorphum dissectum*, and several other variegated Acers, grown in pots for furnishing, are kept in cool houses all winter, and do not lose their leaves till the new ones push the old ones off. *Rhododendron Maddeni*, three feet over, and smothered with bloom buds, a valuable specimen. *Gnaphalium eximum* is a remarkable plant, with silvery leaves, and a fine head of flowers, of a showy character, equal in beauty to the best of the Phenocomas. This will be a fine thing for promenade planting, and should be looked after by all the bedding folks. *Medinilla magnifica*, with nineteen heads of bloom on the new wood, and a couple below on the old wood; not easily beaten that. A house full of Ixoras of all shapes and sizes, among them many pretty plants one foot high in 5-inch pots, with fine heads of bloom. *Gardenia Florida variegata*, a special importation, is the finest variegated-leaved plant known. *Begonia Comte Lemminge* is one of the loveliest climbing plants. On the end wall of the house in which the Ixoras are kept, this Begonia makes an even sheet of its ovate leathery leaves and beautiful carmine and white flowers. From the branches it throws out roots which attach to the wall in nearly the same manner as the holdfasts of the Virginian creeper, and if its connection with the roots in the soil below was destroyed, it would probably not suffer so long as the wall itself retained a certain degree of moisture to feed the aerial, or as we may better call them, the mural roots. Another example of it is to be seen in a suspended basket, and it is certainly one of the finest basket plants.—*Gard. Weekly.*

Domestic Intelligence.

ROGERS' HYBRID GRAPES IN OHIO.—In reply to the inquiries of Mr. Phœnix in the *Country Gentleman*, of May 25, in reference to the Hybrid Grapes of Mr. Rogers, I would say, after an experience of some four years in fruiting several of the different numbers sent me by Mr. R., as the best of his collection, that they are much better as grown here than specimens received from New England. Several of them I think will become popular market grapes, on account of their great vigor of growth and productiveness, accompanied by large and very beautiful bunches. The variety known as No. 4, when well grown, has large shouldered bunches, equal in size and appearance to fair Black Hamburghs, and I think no one by the eye alone, could tell one from the other. In quality, tested together, I thought the No. 4 equal or perhaps rather better than Union Village or Concord. In vigor of growth the vine is nearly equal to the Union Village, and in hardiness equal to the Concord. No. 19 has with me not equalled No. 4, either in size of berries and bunches, or in hardiness; but is of rather better flavor. No. 15 is regarded by Mr. Rogers as the best of his hybrids, and I have seen some very extravagant commendations of it from several sources, but am compelled to say it has not met my expectations. It is vigorous in growth, productive, and bears large and handsome bunches; but the vine is not very hardy—not more so than the Diana—and the fruit to my taste not much better than fully ripened Concords. All those above-mentioned ripen as early as Concords and Isabellas. No. 1 is large and very handsome, but rather deficient in flavor; vine not perfectly hardy without protection in severe winters. No. 9 is a good grower, hardy, bunch and berry about the size and color of Catawba; as early, and in quality about equal to Concord. No. 13 is in growth and hardiness about the same as No. 9; smaller in bunch and berry; sweet, but has too much of the fox flavor. No. 2 is large and handsome, but rather late in ripening for this locality. Where the Catawba would ripen perfectly, I think it would prove one of the best.

The earliest and best of the hybrids, so far as I have tested them, is no 3, which ripens with the Delaware. In shape of bunch and berry it resembles the Isabella, but has the color of the Catawba—perhaps not quite as dark. When the berries of this variety are fairly colored, it is to my taste better than if allowed to hang longer and become more perfectly ripened. In the former state it is vinous and sprightly; but when "dead ripe" is very sweet, and withal somewhat 'foxy.' I think it would make wine of good body and fine quality. The vine is not as rampant in growth as many of the others, but has endured all the late severe winters uninjured, and without protection. So far as I can judge, after fruiting it three years under rather unfavorable circumstances, I would consider it well worthy of trial for vineyard or amateur culture.

There are some others that I have partially tested, but which have no specially distinctive characteristics to recommend them. So long as it is profitable and desirable to cultivate such varieties as Concord, Isabella, and Hartford Prolific, these Hybrids of Mr. Rogers' will, I think, retain their position, and increase in popularity. But if the day comes when a more cultivated public taste demands something better, they will, probably, in common with those varieties, be laid aside for the "something better," if it can be found.—GEO. W. CAMPBELL, Delaware, Ohio, in *Country Gent.*

THE RED ASTRACHAN APPLE.—We wish to call the attention of cultivators to this valuable variety, which is one of the few sorts that can be better grown in the climate of Canada than further south. Indeed, the milder portions of Canada, between and near the lakes, are not altogether suited to its production; but in the colder parts of the Province it is developed in full perfection. In the first place, it is one of the summer apples, and for this reason is always in demand, and in addition to that it is

one of the most handsome apples in cultivation, and on that account commands a ready sale; while its excellence, both for eating and cooking, makes it an universal favorite. Besides all this, the tree is one of the most hardy kinds known, grows very straight and stout, and bears enormous crops of fruit. The Toronto market has never yet been half supplied with them, and it is in vain that fruit dealers inquire for them through the Niagara District, for this variety is not always perfect in that famous fruit region. Here is a good investment for some one having strong, well-drained soil in the vicinity of Toronto, for the tree begins to bear fruit so young that it does not often attain a great size, and a ten acre orchard, planted twenty feet apart each way, would contain one thousand and eighty trees, which in five or six years would yield the owner a very handsome revenue.—*Canada Farmer.*

Monster Vegetables.—A Watermelon was exhibited at a recent Fair in Steubenville Ohio, which weighed twenty-three pounds. The Editor of the Webster (Mass.) *Times* has a Potato in his sanctum, grown this year, which measures 22¼ inches in circumference, and weighs one ounce less than two pounds.

Some Facts in the History of Osage Hedging in Illinois.—It is about twelve years since the Osage plant was first introduced in this section (central Illinois—this I state from memory only). I believe Prof. Turner, of Jacksonville, is entitled to the credit of being the first to introduce and make successful experiments with that plant in making hedges. A few years later quite an Osage fever arose in this vicinity: seed was procured in large quantities from Texas, plants raised, and hundreds of miles, perhaps thousands, were planted out in hedge-rows, all with the mistaken notion that all had been done that was necessary to procure so valuable an article as a live hedge fence at so trifling an expense. They were generally left to grow up, some with cultivation and some care in clipping the top, but more without any attention, and in spite of grass and weeds, have reached the height of six, eight, and in some cases, fifteen feet; and in general they made a tolerable fence, so far as to turn cattle and horses, with numerous pig holes through the bottom.

Thus it went on for several years, when it began to be whispered about among the farmers that the Osage hedge was not quite what they anticipated—that it would not stop pigs or the geese—and it was classed among the numerous humbugs of the day. Then there was a reaction and general stagnation in the Osage market, and plants could not be sold at any price. Standing hedges were played out. I do not say that a standing hedge cannot be made with proper care, but with the neglectful way of doing things in the West, laying down is much the best process.

About four years ago some English hedge-growers came along and commenced cutting and laying them down—cutting each plant half off and laying it down, the next within three or four inches of it, and so on through, leaving one strong plant standing every six feet till done, then cutting them three and a half feet high and laying level on top, twisting the top of the first under the butt of the second, thus making a connected rider the whole length of the hedge.

This stopped all the pig holes, and made a perfect fence at once impenetrable to man, beast, or bird,—but not a *hedge*, (I make a distinction between a fence and a hedge, as everything that will turn cattle may be called a fence, but it is not every fence that is a hedge), then by clipping the young shoots that will sprout out on the top and sides, two or three times the two following summers, a perfect hedge will be made. What I call a hedge is a perfect net of green foliage from top to bottom, covering all the brush entirely from view, four feet high and three feet wide. It may be clipped into any shape you fancy: round, square, or roof-shaped, and it ought to be clipped until the young shoots will not grow more than an inch in a season.

Two things must be kept in view in making a good hedge. First—in laying down, make it so close for two feet from the ground, that a rabbit cannot get through. Second—keep every thing below four feet high. The whole process is very simple, and any Pat that can swing a 'shillala,' can do the work for all practical farming purposes, as well as an Englih hedge trimmer. I think it best not to cultivate the ground on each side more than three years—better in grass. Three years, with proper care, will produce a good fence, and two years more with proper care and clipping, will make a complete hedge.—*Prairie Farmer.*

Foreign Intelligence.

Lycopodiums at the London Exhibition.—Lycopodiums were shown in splendid condition by Mr. Young, who was placed first in the class for 6; second, Mr. Fox. Mr. Young's pans consisted of Wildenovii, Stolonifera, Plumosa, Microphylla, Schottii and Apoda.—*Cottage Gardener.*

Winter-Flowering Greenhouse Plants.—The following are a few of the useful winter-flowering plants. The chief of these have been in flower since November, or will do so before April:

In the stove—Franciscea eximia, confertiflora; Æschynanthuses, Æchmea fulgens, Torrenia pulcherrima and Asiatica, the beautiful Gesneria cinnabarina, splendens, and zebrina splendens, Jasminum gracile, Rogiera cordata, Begonia Digswelliana, one of the freest of winter-flowering plants. We have at the present time plants in 24-sized pots, 14 inches high by 18 inches in diameter, covered with bloom; besides standard plants in 32-pots 14 inches high in the stem, and having compact heads 7 or 8 inches in diameter, loaded with pendant rosy purplish flowers. Besides these, there are the elegant little Sonerillas, with their feathery-looking rosy pink blossoms. Gardenias Fortuni, florida, and citriodora are more or less commencing to flower. In stove bulbs there are the bright-colored Amaryllis aulica fulgens, Johnsoni præcox, crocata, etc., Imatophyllum miniatum, Eucharis amazonica, Pancratiums, and others.

In the greenhouse—Daphne odorata alba, the sweeter one of the two; forced Oranges in flower; Hovea Celsi; Habrothamnus elegans, in flower all the winter; Acacia longiflora magnifica; Coronilla glauca; varieties of Cytissus, with forced Lilacs, Weigelas, Deutzias, Sweet Briar, Mignonette, Nemophila, etc. In greenhouse bulbs the most prominent and useful are the Cyclamens in their several kinds: Coum, persicum rubrum, persicum album, Atkinsi, etc., are the most showy; though I regret to say, that in consequence of the great demand for them, the prices are high.—*Cot. Gard.*

Laeken, the Country Palace of the King of the Belgians.—It is situated about three miles from Brussels. It is a plain building, but is said to be elegantly furnished. It was built for the Austrian Governor of the Netherlands before the French Revolution, and is famous as being the place where Napoleon planned his disastrous Russian campaign. It is reached from Brussels by a road lined with tall Lombardy Poplars, called the Allée Verte, and is situated on a considerable eminence.

The approach to the palace is through a handsome pair of iron gates. A circular piece of grass, with a basin about 50 feet in diameter, having a large jet in the centre, is encircled by the carriage drive to the front entrance; and on the left of this is the walk leading to the pleasure-garden, which is laid out in an irregular form, with large masses of such plants as Kerria japonica, Pyrus japonica, Lilacs, Laburnums, and many other large deciduous flowering shrubs.

In the garden is placed an Orangery, a building about 200 ft. long by 30 ft. wide; with a dark roof, and admitting light only by the front sashes, the back and ends being of brick. It is heated by four large upright stoves, and contains about 100 Orange trees, many of which are of large size, but none of them in robust health. Most of the trees are very old, and trained much in the same way as those at Versailles. Interspersed among the Orange trees are many fine and extra large-sized specimens of the Sweet Bay in good health, and some few trees of the Pomegranate.

A walk to the west of this leads to a mixed garden of fruit trees and flowers. The beds for flowers are cut out on the grass, and standard Pear and other fruit trees are arranged by the sides of the grass paths and between the flower-beds. The effect of this arrangement, however, is not good. This garden was doubtless originally a kitchen and fruit garden, as many of the old standard fruit trees remain, although now quite worn out. The flowers generally consist of herbaceous plants and annuals, amongst which some very large masses of Dielytra spectabilis are conspicuous.

A walk through the centre of this garden leads to the plant-houses, consisting of two stoves and one orchid-house. The stove plants are allowed to grow together in the wildest confusion, and exhibit no attempt at good cultivation. They consist of Franciscas, Euphorbias, Allamandas, and such like, with a few succulents. The Orchid-house contains some Cattleyas and Vandas, with Stanhopeas, Maxillarias, Phaius Wallichii, and many other inferior things; but like the stove plants indicate a total absence of good cultivation. Two pits for Pines, and a small pit for half-hardy plants, make up the remainder of the glass-houses. Adjoining this is a kitchen-garden of about an acre. This, however, we suppose, could not have been the only kitchen garden belonging to the establishment, but was the only one we saw.

The park adjoining the palace is extensive, and laid out with much skill; we believe by the late Mr. Macintosh, when gardener to his Majesty the King of the Belgians, at Claremont. This beautiful park is open to the public on certain days. A Gothic memorial church is being erected to the late Queen of the Belgians, at a short distance from the Palace. There is also a cemetery here, wherein lie interred the remains of the celebrated Madame Malibran.—*Gardener's Chronicle.*

TAKING IMPRESSIONS OF FERNS.—The materials used are Nitrate of Silver, Hyposulphite of Soda, flat Camel's-hair brush, printing frame, one or two porcelain dishes, and paper, all of which may be obtained of any photographer.

First, as regards exciting. Dissolve one drachm of Nitrate of Silver in two ounces of rain water. When dissolved, pour the solution into a saucer. Pin a piece of paper on a board held horizontally; then, with the Camel's-hair brush, carefully brush this solution on till the paper will imbibe no more; then hang up to dry in a dark room. This process had better be performed by candle-light, as if the paper is exposed to the sunlight or to daylight, it will turn black. It will be as well also when the paper is being prepared, to mark it in the corner on the prepared side, that it may be better distinguished in the after process. Printing—supposing there is good diffused sunlight, and the glass of the printing frame is cleaned well on both sides, place the object to be copied on the glass face upwards, the excited paper on this face downwards, then the back-board, which must be screwed down tight. The frame may be now carried into the light, and placed facing the full sunlight; care must be taken that no shadow falls on the frame, otherwise it will present streaks. The time of exposure will be about five minutes. As to fixing, when the printing has gone deep enough, take the paper out of the frame and immerse it in the fixing solution, made by dissolving 3 ounces of Hyposulphite of Soda in 1 pint of rain water; let it be immersed for about five minutes, then place it in a pail of water for about six hours, changing the water twice or three times, so as to completely wash away every trace of the soda, which, if allowed to remain, would cause the impression to fade completely away. After which, hang up to dry as before. When dry, if the natural tint is required, color picture like the original.

HISTORY OF THE JASMINE.—Of this fragrant, beautiful shrub we are told that the Duke of Tuscany was its first possessor in Europe, and he was so jealously fearful lest others should enjoy what he alone wished to possess, that strict injunctions were given to his garden not to give a slip, not so much as a single flower, to any person. To this command the gardener would have been faithful had not love wounded him, by the sparkling eye of a fair but portionless peasant, whose want of a little dowry, and his poverty, alone kept them from the hymenial altar. On the birth-day of his mistress, he presented her with a nosegay, and, to render the bouquet more acceptable, ornamented it with a branch of Jasmine. The *povera figlia*, wishing to preserve the bloom of this new flower, put it into fresh earth, and the branch remained green all the year. In the following spring it grew and was covered with flowers. It flourished and multiplied so much under the fair nymph's cultivation, that she was able to amass a little fortune from the sale of the precious gift which love had made her, when, with a sprig of Jasmine in her breast, she bestowed her hand and wealth on the happy gardener of her heart,—and the Tuscan girls, to this day, preserve the remembrance of this adventure by invariably wearing a nosegay of Jasmine on their wedding-day; and they have a proverb, which says, a young girl worthy of wearing this nosegay, is rich enough to make the fortune of a good husband.

ROSES AND CAMELLIAS IN WINTER IN WINDOWS.—Those who grow Camellias must supply them moderately with tepid water when in flower, and for those out of flower, the warmest position must be given to induce them to make an early growth. Sponge the leaves weekly, to keep them clean, and to prevent the accumulation of dust upon them.

Roses in pots for the window must be frequently syringed, and fumigated when necessary; there are many who do not pay sufficient attention to this point, and therefore their success is not what their industry would otherwise deserve.—*Gard. Weekly.*

WILL PINES HYBRIDIZE?—The following is from an essay read before the Botanical Society of Edinburgh, by Mr. McNabb:

"I lay before the meeting specimens taken from 12 seedling plants of Abies Menziesii, being part of the offspring of the noble tree now growing in the Keillour Muir Pinetum, Perthshire, the property of William Thomson, Esq., of Balgowan, and which is without exception one of the healthiest and finest trees of the kind in Europe. It was planted by the late Mr. Thomas Bishop, forester, Methven, about the year 1831. The tree grows in a deep, spongy peat soil, where it tillers freely, and cuttings stuck into the peat soon take root. The plants produced are very various, as seen by the specimens now exhibited. The seedlings were raised from seed presented to the Botanic Garden by Mr. Thomson during the year 1858, being from the first cones produced by the tree, and it may have happened that the male flowers were not perfected simultaneously with the female ones. In the neighborhood various species of the Abies tribe exist in large quantities, particularly the Abies nigra, alba, rubra, and excelsa. As some of them stand within fifty yards of the Abies Menziesii, judging from the diversity of seedlings, I am inclined to think that some of the young female cones must have been fertilized with the pollen of some of the above-mentioned trees, particularly with that of the Abies nigra; as it is a remarkable fact that the nearer the seedlings approach to the Abies nigra the more healthy and compact they become. I lay before you some specimens of Abies Menziesii, raised from home-saved seed just received from Balgowan. Notwithstanding that the seedlings were produced at a subsequent date, they exhibit much the same appearance as those raised in the Botanic Garden. Although healthy, none of them possess the vigor of one specimen which accompanies them, said to be taken from a young tree struck from a cutting eight years ago."

THE BULB FARMS OF HAARLEM.—In the first place the natural soil about Haarlem is composed chiefly of sand and decaying shell, which has been thrown up in former times by the ocean. It also contains a portion of vegetable matter, and is enriched annually by a liberal supply of cow-dung—the only kind of manure which is used. The land which is to be planted with the bulbs is trenched 2 or 3 feet deep in spring, and manured at the same time. But it is not yet in a fit condition for the reception of the Hyacinth. And mark, particularly, the next preparatory operation. *A crop of vegetables, generally Potatoes, is taken off it*, in order to draw out any rankness or impurities which might prove injurious to the Hyacinth. This being done during the spring and summer months, the land is ready for the reception of the bulbs in autumn, which is the proper season to plant them. Nor is this all; a careful system of rotation in cropping is also observed, so that these bulbs are rarely, if ever, grown on the same land two years in succession.

When planted in October, the bulbs are covered over with 3 or 4 inches of soil, and are further protected during the winter months with a layer of reed, some 5 or six inches in thickness. And now the process of growth immediately begins, and in a way to which we beg to draw particular attention. It is the roots only that grow. They strike deep down into the earth in search of nourishment, while the stem remains, all but inactive, patiently waiting for the time when the roots shall be in a position to supply all its requirements. And thus it happens that when the spring comes round, and when the bulb begins to grow, as we say, a sufficient supply of nourishment is readily and abundantly supplied.

Another point which the Dutch cultivator considers of great importance is the careful preservation and full development of the leaves. Any disease in the leaves is rapidly communicated to the bulb, and hence every precaution is used to keep them in health and vigor. The flower stems themselves are usually removed before they are in full bloom, not with the view, as is sometimes supposed, of strengthening the bulbs, but in order to prevent the heavy flower-heads from falling upon and rotting the leaves. Huge heaps of Hyacinth blooms may be seen laid up in the corners of all the fields about Haarlem in the month of April, having been cut to prevent the chance of such a thing taking place. The Hyacinth would appear to be very liable to become diseased, and hence every precaution is taken by the Dutch cultivator to remove any predisposing cause, whether it be in the composition of the soil or in any injury that may happen to the leaves.—*Gardener's Chronicle.*

CALADIUMS AT THE LONDON SHOW.—Caladiums were plentiful, and generally good—those from Mr. Young, who was first in the class for six, particularly so; this group consisted of Belleymei, Wightii, Chantinii, marmoratum, argyrites, and bicolor splendens; Mr. Fox, gardener to J. Gibbs, Esq., Highgate Rise, second with Wightii, Chantinii, cupreum (stale and burnt), pictum, Howletii, and bicolor splendens.—*Cottage Gardener.*

Horticultural Notices.

PENN'A. HORTICULTURAL SOCIETY.

MONTHLY DISPLAY & BUSINESS MEETING, AUG. 15.

This was the great month for Gladiolus, and the many excellent contributions rendered the meeting quite an interesting one. The best six specimens was awarded to H. A. Dreer. The winning varieties were Eugene Domage, Lord Raglan, Madame Vinchon, Raphael, Madam Hacquin, McMahon. Mr. Dreer also obtained the premium for the best collection, comprising 32 of the best known varieties.

The best collection of hardy Herbaceous Phlox was awarded to Thomas Meehan, namely, Diana, Marie Van Houtte, Ernest Duval, Madame Vatry, Beaute Supreme, Mons de St. Prejet.

The best general display of plants to D. Robertson, gardener to M. Baird, Esq., this contained some beautiful specimens, amongst which particu-

larly worthy of note for their beauty or interest, were Cyanophyllum magnificum, Allocasia metallica, Yucca alœfolia variegata, Sonerilla Van Houttei, and many Caladiums.

The best basket of Cut Flowers, best Design of Cut Flowers, and the best Hand Bouquets were all obtained by Donald McQueen, gardener to Joshua Longstreth, who seems determined to maintain his supremacy in the art of arranging flowers with elegance and taste.

Mr. Hibbert, gardener to Fairman Rogers, Esq., obtained the premium for the best Hanging Basket, which was very much admired.

Special premiums for plants were awarded to Mr. Hibbert, and to Mr. Bailey, gardener to the President, for a collection of the Pompone Dahlias, a class of "dear little flowers," that is coming into great favor with the ladies, and so, as a matter of course, with the rest of mankind; Mr. Bailey's set were the prettiest we ever saw in one lot together —24 kinds.

A special premium for a Collection of Plants was awarded to Donald McQueen; although not equal to that which obtained the premium, it contained some good specimens of common but beautiful things. It showed what good results one could obtain, although confined to such plants as Coleus Verschaffeltii, Justicia carnea, Double Zinnias, China Asters, Pentas carnea, Cissus discolor, Cuphea platycentra, etc., and was on the whole very creditable to Mr. McQ.'s skill.

To Mr. G. Huster, gardener to Col. Alexander Cummings, a special premium for Basket of Cut Flowers.

The following resolution and award were also unanimously adopted by the society:

The Committee have frequently remarked with great pleasure the beautiful display of rare and graceful plants in the conservatory of our late President, M. W. Baldwin, Esq., on Chestnut Street, above Eleventh. They would respectfully offer the following resolutions, and ask their adoption. The gardener, Mr. Joyce, by his diligent attention and close confinement to his professional duties, has been deprived of the opportunity to compete for the regular premiums offered by the society:

Resolved, That the thanks of this Society are due, and are hereby tendered to M. W. Baldwin, Esq., for his liberality and unselfishness in throwing open to the public his elegant conservatory on Chestnut Street, and to his gardener, Wm. Joyce, for the professional skill displayed by him in the cultivation of the magnificent specimen plants with which it is furnished.

Resolved, That the Silver Medal of the Society be awarded to Mr. Joyce, as a testimonial of its appreciation of his skill and taste.

The exhibition of fruits was very full, thanks rather to the public spirit of the exhibitors than to the society, whose schedule of fruit premiums was singularly short on this occasion.

The best 12 Nectarines were the Stanwick, from Mr. G. Huster, gardener to E. Bouvier, Esq.; Some very fine Elruge from D. McQueen, received honorable mention in the Committee's report.

The best quart of Blackberries were the New Rochelle, by A. L. Felten; also a seedling freestone Peach, apparently of merit, and Isabella Grapes, of the magnificent size and quality for which Mr. Felton annually receives the approbation of the society.

Remarkably fine Julienne and Washington Pears came from Charles Harmer.

Cornell's Fancy, one of the best and most beautiful of early Apples, came from S. W. Noble.

Greenhouse Grapes were out in force, though no premiums were offered this month for them. The Committee awarded a special premium for 6 "well colored and well ripened" Black Hamburg, to D. Robertson. $3 to Gebhart Huster, for a magnificent collection of Grapes, comprising most of the popular varieties. For 3 bunches of Frankenthal, to D. McQueen. For some "very large and well ripened" White Frontignans, to Daniel Curtin, gardener to B. Leedom, Esq. To James Astley, for a fine collection, including Calabrian Raisin.

Of Natives, the Adirondac fully ripe and of excellent flavor, was exhibited by Thomas Meehan, from Isaac Pullen, Hightstown, New Jersey.

Ingram's Hardy Prolific Muscat, a promising early foreign variety, was exhibited by Mr. J. E. Mitchell.

The principal novelty in the Vegetable Department was in some fine Tomatoes, "The Tilden," from Mr. A. W. Harrison, on which the Committee reported that "they were very solid and handsomely shaped, and said by the grower to keep a long time on the vine, and when gathered."

Mr. A. L. Felton received the premium for the best Collection of Vegetables by a market gardener; and J. Huster, gardener to Geo. Harrison, Esq., the best by a private gardener. A special premium was awarded the gardener to J. E. Mitchell, Esq., for a display of Vegetables. There were on exhibition some very fine Rhode Island Green Corn, from Coleman Fisher, Esq.; and some very large Garnet Chili Potatoes, from Charles Harmer.

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

THOMAS MEEHAN, Editor.
W. G. P. BRINCKLOE, Publisher.
NOVEMBER, 1865.
VOL. VII.---NO. 11.

Hints for November.

FLOWER-GARDEN AND PLEASURE-GROUND.

As soon as the ground gets caked with the first real frost, herbaceous plants should be protected. Though hardy, they well repay this extra care,—mostly natives of woods or grassy places in their native state, they expect a covering of leaves or dry grass. We find dry leaves the best material for the purpose, a few inches is a sufficient depth,—a little soil being thrown on to prevent the leaves blowing away. Where such material is not at hand, the common garden soil may be drawn over them, as we have before recommended.

Most of the tender plants that we desire to preserve over the season, have now been lifted from the borders, and removed to winter quarters,—and in a few weeks the beds will present a rough and forsaken appearance. It is too often the practice to leave the borders just in this neglected condition till spring-time returns. But the person of true taste finishes up the beds, and makes all tidy. In the absence of summer flowers, even order pleases.

As soon as the first white frost has blackened *Dahlia leaves*, the stems should be cut back to a few inches of the ground, the label securely fastened, and the root placed away in a cool place secure from frost till next March, when it should be 'sprouted,' divided, and again set out. Madeira vines, Tigridias, Gladiolus, Tuberoses, &c., require the same attention.

VEGETABLE 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 possi-

ble. 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 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.

FRUIT GARDEN.

The Grape prefers a deep warm soil, but one that is not dry,—such as most limestone soils are after being trenched and drained. A partially shaded aspect is also preferable. Mildews and many diseases come from the drying influence of a full exposure to a July or August sun.

Except in the more northern portions of the continent, a southern aspect is the worst possible for all kinds of fruits, except where the one idea of earliness is all important.

So much has been said in this journal on the proper preparation of the soil for orchards, that it need not now be repeated. We would only say, that a light dryish soil is the best to choose for the Peach. The Pear does best on a strong loamy soil. Plums much the same as the last. The Apple prefers a heavy loam, if on limestone so much the better. The Cherry does well in soils adapted to the Peach.

Apples, Quinces, and Plums should be examined before frost sets in, and if any borers have effected a lodgment—a jack-knife and a strong piece of wire are all the implements necessary; a man will go over several hundred trees a-day. It is a cheap way of preserving trees. If many of the remedies proposed by correspondents in our paper have been tried and found effectual, such as tobacco stems, etc., there will be few borers to deal with in the examination.

In choosing Dwarf Pears, select those that have been budded close to the ground, as when they are replanted the stocks should be buried an inch below the pear scion, which prevents the attacks of the quince borer. If a long stem has to be buried, the usual consequences of deep planting result, and do as much injury as the quince borer. Also in choosing, select, if possible, plants that have been raised from cuttings; for layered stocks have almost always a long deep tap-looking root, on which dwarf pears do not do well. If we have to use such dwarf pear trees, better shorten some of this long trunk root before planting. Never plant what appears to be the stem of a tree far beneath the surface, under any circumstances, for disease will be most probably an ultimate consequence.

Probably most of our fruits do best in partial shade. The Gooseberry and Currant certainly do. The former must have shade; and if on the moist northern aspect of a wall, so much the better. The Raspberry prefers a rather moist soil, and partial shade.

In cultivating Raspberries on a large scale, they do best in hills, as the cultivator keeps them from crowding each other so much. For garden culture they are better in rows, the suckers to be kept hoed out occasionally as they grow; enough only being left that will be required for fruiting next year. Where canes are required for new plantations, of course a portion of the crop must be sacrificed to the suckers.

HOT AND 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.

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 greatly neglected. Whether as a source of pleasure or profit, it is an equally delightful occupation; and the remarks made we trust will be the means of awakening some enthusiasm on 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 five to six 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 obtained 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 can be 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 scarcely 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.

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.

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 weeds.

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 greenhouse and frames. Where these are at hand, evergreens may be put in, in boxes or pans, all through the winter.

Communications.

WHICH ADVICE TO FOLLOW?

BY A "PERPLEXED PUPIL," WESTERN PENN'A.

In the Horticultural department of a popular journal for August, may be found the fact stated, that "Vineyards, which have been kept *entirely clean of all grass, weeds, or any crop which would gather moisture*, and which have been properly pruned, are almost free from mildew;" to which is appended an editorial endorsement, that "pruning and *good culture* as suggested, are the best preventives of mildew." Run your eye over the columns of the same journal in the succeeding month, and you will find stated: "Nature invariably endeavors to protect the soil from direct sunshine." "Nowhere does she uncover the soil." "Should we wonder that the careless vineyardist, who *lets the weeds overrun and mulch the ground*, gathers sometimes the richest reward." "On the training of the vine we ought to take the broad hints which nature gives us, although it is now claimed by many that we have got far ahead of the venerable dame in learning, and her hints are decidedly antiquated."

I have italicised some of the above quotations, to show their antagonism, and omitted a large portion of the second article, which contains some useful advice and practical good sense.

If the last sentence I have quoted is intended to apply to those who have adopted thorough cultivation as their standard in Horticulture, it is hardly charitable, for they have at least the excuse that such has been the burden of professional teaching from time immemorial,—and nowhere more forcibly inculcated than in the journal quoted. If cleanliness has been classed next to godliness in morals, it has also generally occupied a high position in in Agriculture. Nor is the spirit of the remark quoted any better if it is intended to apply to those who wish to go below the surface of things, and to use the abstract powers of reasoning given to them, to obtain something better and beyond what they have seen; otherwise the scientific farmer would be floored by the Indian of the Rocky mountains, living upon mast in the summer time, and digging his roots in winter,—who might say to him, all your agricultural perplexities come upon you because you will plow, and harrow, and drill, and roll, and cradle and gather into barns,—nature does nothing of the kind, therefore follow nature, and live as I do; or the inhabitant of Central Africa, with his whole habiliments concentrated in one scanty cotton bandage, might say to the denizen of the metropolis, whistling over the size of his tailor's bill, that just comes of art and civilization: follow nature, and do as I do, and you and will have none of that kind of trouble. So the conservative logician glancing over the long list of late railroad casualties, might safely observe, cattle have legs and use them safely as powers of locomotion; horses have legs and do the same; man has legs, and nature evidently intended him to be a pedestrian: nature never made an engine, but some goose of an engineer invented a locomotive, and in this list of accidents, lo! behold the consequence of departing from nature.

We cling to our manuals as the embodiment of much that is valuable in the way of experience in horticulture in the past. But if nature, not books, is the newer and more advanced doctrine, let us look at it. Nature is generally understood to be but a synonym for Deity. Now if the Divine mind, and a finite human mind, were to attempt the same thing, no one would doubt as to which would reach the better result; but the world is governed by a very complex system of agencies and forces, established by creative power which we call the laws of nature, and which do not always produce the results which man may desire. Thus, in the fruit and vegetable department, the object of nature is simply reproduction: with man it is enlargement and improvement. Nature grows a weed like celery: man by culture blanches it, and makes it a vegetable. Man runs things up to a higher standard of excellence: Nature, in a general way, runs them down. Nor are the teachings of nature so clear that we can, by the stroke of the pen, substitute simplicity for science. The sagacious mind of James Madison pointed out with regard to a written revelation, that though a thought might be clear to the Divine intellect, yet the moment it was communicated to man, and had to be transmitted through imperfect human language, then the ambiguity came in. So in the phenomena of the natural world, a fact is presented, but the cause of it may lead to much diversity of opinion. When Leibeg analyzed plants, and showed their constituent parts, the agriculturist cried Eureka! I must put in the soil the elements of the plant, and here will lie the secret of success; but nature responded, the whole of my processes are not yet comprised within the chemist's manual.

And so, to sum up, clean culture may be a good thing, and mulching, or quite likely stone walks, to modify summer heat, and give moisture to the roots of the vine, may be a good thing! We need *trial* as well as observation, and happy will he be whose theory is attended with success, when it shall have been subjected to the ordeal of experiment.

THE CURCULIO SETTLED.

BY J. H. C., CHILLICOTHE, O.

Jarring the trees is with me a settled point, for three reasons: 1. It is the surest; 2. It is the quickest; 3. It is less expensive than any plan yet discovered: one minute to each tree is enough; and as none of these little grey rebels are to be paroled after they are down, your Apples and Cherries will not be injured by them. They *can* travel from tree to tree.

PROPAGATION AND CULTIVATION OF THE GRAPE.

BY F. F. MERCERON, CATAWISSA, PA.

Read before Pa. Horticultural Society, Sept. 5,65.'

So much has already been written and said on the subject of the Propagation and Cultivation of the Grape, that I am very much afraid what little I can say on the subject will not enlighten you a great deal, as many of you, I know, are much farther advanced in horticultural skill than myself.

As regards the Propagation of vines, it is now with me a very simple process. When I commenced six years ago, for the first time to grow vines, I began with a Propagating-house, thinking, that to grow good vines successfully and profitably it must be done under glass: and although I had as good success as most people, and grew as good plants, they never gave me entire satisfaction, nor were they equal to the vines grown out of doors, nor, in my estimation, worth as much money. I would not to day accept the services gratis of any propagator to grow vines for me under glass.

But there is one fact you must bear in mind, that all vine-growers have not the good fortune to possess land as good and fertile as mine at Catawissa. A fine sandy loam of great depth, with a subsoil of 5 to 6 feet of pure loam, such as is used in foundries for moulding-sand; and I have never yet seen the drought affect it to any great degree.

There is but one grape of any value in the market that I cannot grow successfully by cuttings out of doors, and that is the Delaware; and they are such feeble growers, that I prefer raising plants from layers. Of the following varieties, I find no difficulty in growing them from two-eyed cuttings, and many of them from single eyes, without any other preparation of my soil than plowing and harrowing as fine as I would for turnips: Rebecca, Diana, Concord, Clinton, Creveling, Iona, Adirondac, Franklin, Hartford, Taylor, Loomis' Honey, Maxatawney. I do not want it to be understood that I do not manure my ground. I manure well for grape cuttings, and as the digging of the vines in the fall (with forks) trenches the ground pretty well, I follow two years with strawberries. After the ground is ready, I stretch a line, (I have one 300 feet long for the purpose), then pass a rake along the line to clear away lumps, if there should be any, and then insert the cuttings—plunging the upper eye out of sight; and, before the line is taken up, tramp both sides firmly with the feet.

I plant cuttings 6 inches apart in the rows, and the rows two feet 6 inches apart, and worked with hand cultivator and hoe. I prefer cuttings six inches long, but plant a great many not over four—prefer two-eyed cuttings. I prepare my cuttings in November, already for planting in the spring, and pack them away in boxes with the tops downward, using old tan-bark sifted for packing, and covering the boxes with tan or earth.

On no account must the pruning be delayed until spring. Even the Concord is injured for propagating if left on the vines all winter, unless the winter is a mild one. I planted 3000 cuttings last spring of Concord that were taken from the vines sometime in March, and 25 per cent. of them failed to strike, while of those cut in November not over 2 per cent. failed to grow.

The cultivation of the Grape has, of late years, and is now occupying a large share of the attention of the people of this country, and very large sums of money are invested every year in planting vineyards; and any article on Grape culture is eagerly read by all who are interested, hoping to find something that will enlighten them.

I have never taken any special pains in the cultivation of my own vines. Six years ago last spring I planted my vines, merely plowing and harrowing the ground, putting on a fair coat of manure, and a little lime—at the rate of 30 bushels to the acre. All the cultivation they have had since, has been merely to keep down the weeds. There has never been a horse or plow in it since. I have always had good crops of Grapes, and this year of great failure, I have a fair crop of fruit; and my vines last winter were not laid on the ground as they generally are, and a great deal of the wood was injured by the severe weather.

I am of the opinion that our vines are cultivated too much. I have some vines in odd corners, where it is impossible to give them any cultivation at all, and on which I never fail to get an abundant crop of fruit.

Mr. Fuller says, page 160 of his "Grape Culturist," "The greatest obstacles in the way of cultivating the Grape in gardens, *particularly in cities and villages*, etc." Now, in the City of Philadelphia, they are generally successful in raising grapes, even when we fail in the country; and what a small number of vines in city yards get any cultivation at all!—why in two-thirds of the vines the roots arecovered with pavements of brick or flags, and the light of the sun never reaches them. Three years ago, on my way to the Fruit-growers' meeting at Lancaster, I stopped a few hours in Sunbury, and in the garden of lady there, I saw such a vine of Isabella as I had never seen before, both in productiveness and size of fruit. She very kindly gave me some of the grapes, which I took to the meeting, and there was not a bunch of Hamburghs on the tables that could equal them in size of berry. The roots of the vine grew entirely under a brick pavement.

If plowing and tearing through grape roots is so beneficial, why do not gardeners cut and slash into their Grape borders? But do they do it? No. They mulch them well, and that is what they want, in my humble opinion.

I think that our vines are pruned too much in summer. I am certain that two varieties—Concord and Creveling; which, by the bye should grow alternately on the same trellis—do not want to be touched after they are pruned in the fall; but let that pruning be thorough, and no more wood left on than you want to fruit. The greatest trouble I have to contend with is the burning of the leaves: this is particularly the case with the Delaware. With me they lose their leaves so early in the year, that on many vines at this writing (Sept. 1) there is not a particle of ripe wood on them, nor ever will be, and the vines will have to be cut down to the ground this fall, to produce new wood for another year. The only vine of Delaware that I have that has any good fruit on it, is one which, on the upper slat of the trellis, has two strong canes of Norton's Virginia growing on it, the fine foliage of which, with the laterals drooping over either side, fully protected the Delaware from the scorching sun; the leaves were not burnt up, and the fruit fine and well colored.

Now I have heard a great many persons say, when their vines were burnt as I describe, that the thrip had done the mischief. This year I had scarcely any thrip at all, and I feel certain that my Norton's Virginia saved one good vine of Delaware grapes. I shall now try the experiment of planting a Norton or Franklin, (both fine wine grapes), between my Delawares, and arrange my trellis in such a way that they shall serve the purpose of a sun-shade to the tender leaves of the Delaware, and other varieties that need such protection.

CHARRED STUFF.

BY W., TYRONE, PA.

It is related of a worthy old farmrr, who was examining some new manures at an Agricultural Fair, that, on coming to a sample that had too rank a barn-yard odor to be agreeable to unpracticed noses, he took some hearty sniffs, and then expressed the opinion that that *was* good stuff, and no mistake.

But the *gardener* likes his manures 'sweet;' and next to the odors of his flowers, and of the fresh earth, he enjoys the smell of the compost heap and the 'charred stuff,' which never break their promise to the—nose.

And what is fuller of promise than this charred stuff? It is healthful alike for the lungs of the gardener and for the roots of his plants. A handful of it that covers some choice seeds, or to surround a newly set plant, keeps away insects and mold, cold wet; makes a surface that rain will not harden, and imbibes nourishment for the plant from exhalations of the earth, and inhalations of the air. If he wishes to store plants or roots, or to bleach celery very nicely, it will keep off all sorts of pests and contaminations: there is no danger about it of the mouldiness or the acrid salts which earth shut up in pits or cellars is apt to be polluted with. Potatoes planted in such stuff are said not to rot; and it is even said that if the set itself be scorched and blackened before planting, it will grow freely and remain healthy. Certainly the heat ought to destroy the spores of fungi as well as the eggs or larvæ of insects.

A still greater advantage is offered by this process of charring to those who happen to be located on tough heavy clayey soil. A little roasting will convert such a soil from a sticky, lumpy mass, to a light open friable mold.

A very simple experiment can be tried by any one who has such a clayey garden, and no resource but to make the best of what is at hand. Take a small fire-proof vessel—a crucible, or an iron pot, or a pie dish—place some of the clay within, and cover with an iron lid or another dish, and let it roast in the oven until the vegetable matter in the lump becomes black. If the stubborn clamminess is satisfactorily roasted out, bed after bed of the garden may be burned by using the trimmings, chips, and other woody waste that can be gathered up in the course of the year. The roots and other vegetable matter in the soil aid the effect. The improvement of the texture of the soil will be permanent, and the manurial influence of the charcoal is scarcely less durable, though it is most distinctly efficient while fresh and lying on the surface.

The operation of burning develops clouds of smoke, and a peculiar empyreumatic odor, not unpleasant, but very beneficial to inhale, provided the smoke itself is not inhaled. It requires some care and watchfulness to prevent flame breaking out, and burning the coal to ashes; but the curling smoke, and the suppression of flame, will give to a boy an interest in the operation that will steady him to the care of it for hours; or it can go on sim-

ultaneously with some other job within view of the heap. All refuse should be charred in this way during a dry time in the fall, as in Indian summer, rather than be left litter on the beds and paths, making winter all the drearier, and destined to be burned away to ashes in the spring. The material used for the protection of plants through the winter can be saved up for charring, and made doubly useful.

THE CURCULIO.

BY C. B. OTT, PLEASANT VALLEY, PA.

The article in the September number of the *Monthly*, on "Modern Improvements in Fruit Culture," has given me more comfort than any thing I have read for a long time. I think by a proper selection of varieties for one's own neighborhood, more and better fruit can be raised, than our forefathers did a hundred years ago, because we have a better collection to select from.

One of my neighbors raised a very fine crop of Plums this season. Last year he had his henhouse near the trees,—this year he had his chicken coops under the trees. He also has a lot of trees of the same variety, that stand a short distance off in sward, which did not bear any thing: they were equally as well set with fruit last spring.

LETTER FROM JAPAN.

BY THOMAS HOGG.

The following highly interesting letter is very kindly communicated to us by Mr. P. B. Mead:

* * * My first visit to Yedo, soon after arriving in the country, being but short, and, owing to other circumstances, offering but limited opportunities for seeing the suburbs of the city, I was anxious to renew it, more particularly for the purpose of visiting the commercial gardens in the neighborhood. By the courtesy of the Hon. Robert H. Pruyn, United States Minister, my wish has been gratified. Early on the morning of July 13th, in company with Mr. Portman, Secretary of Legation, and another visitor, I started for a twenty mile ride on the Tokaido, to the great city.

The road, for the greater part of the way, presents the appearance of a continuous village. After passing the town of Kanagawa, the rice fields are cultivated close to the margin of the road, extending like a green carpet to the rising ground, about a mile distant, and gradually coming nearer to it as you approach Yedo. Until you arrive at the river Logo, the spot of greatest interest is where Mr. Richardson was murdered two years ago. The road here, for the distance of about a mile, is bordered with Pine trees; and though of rather stunted growth, they give relief to the monotony of the dead level. Passing through the town of Kawaski, you arrive at the river, a stream of considerable length, and navigable for flat-boats for a distance of about thirty miles. This river is the limit, toward Yedo, to which foreigners may ride by treaty stipulation; but, from the nervous state of feeling produced by several attacks on them when away from Yokohama, the privilege is not now often taken advantage of.

Here you dismount, and are ferried across to the other side in scows. The road from here, until you approach Sinagawa, a suburb of Yedo, is less closely built up than the part of the road just passed over. For two or three miles' distance from the river the land is quite flat, yet not low enough for the cultivation of rice. The soil is a light sandy loam, and well suited to the cultivation of vegetables. Occasionally, as you pass along, you see orchards of trained Pear trees, of the kinds peculiar to the country. The trees are planted, as near as I could judge, from 12 to 15 feet apart. After attaining the proper height, the tree is allowed to form branches, and these are trained to a rough frame-work of the same height, perfectly level, and extending over the whole area of the orchard. What object the cultivator has in training them in so careful a manner, I have not as yet ascertained; but why may it not have its advantages in enabling him to secure his crops in the highest possible condition? Every fruit is thus brought into view, and within reach of the gatherer, who, where trees are left to grow in their natural form, too often runs the risk, in order to secure some tempting prize displaying its beauties on some inaccessible branch, of injuring the tree, or, worse, possibly himself.

After crossing the river, we soon arrive at the famed tea garden at Omura, celebrated for its Plum trees, so attractive when in flower. At the season we went up, they presented nothing more than Plum trees usually do.

The pains taken to bring every available space into cultivation for Rice, proves its value as the chief support of the people. Here and there in the fields spots of land are seen which, having been originally a little higher than the surrounding surface, and unsuited for Rice, have been levelled off, and are cultivated with vegetables. These dry spots are usually skirted with Pines, which apparently have been planted to prevent the soil from being washed away by heavy rains.

The country roads around Yedo are exceedingly pleasant, and generally sufficiently wide for two or three persons to ride abreast, and frequently for long distances completely overshadowed by trees. Numerous patches of Bamboo are met with in every direction, and must be a source of considerable wealth to the country. It enters largely into the economic uses of the people, and for the purpose of hoops for pails and tubs of all sorts it takes the place of iron, hickory, and oak, used for the same purposes with us. The young and tender shoots in the spring are also in demand as an article of food.

To supply the wants of so large a city, the cultivation of vegetables is extensively carried on. The varieties, at the season of my visit, consisted chiefly of Beans, Onions, Egg-plants, Tomatoes, Carrots, Squashes and Cucumbers. Their manner of preparing them for market is exceedingly neat; every thing being carried in baskets, they are brought in the best possible condition. The manner of cultivating the Cucumber was to me somewhat novel, and it appeared in some respects superior to our mode. Instead of sowing the seed in hills, it is sown in double rows, as Peas are frequently done, only at a greater distance apart, both between the rows and the plants, say three feet between the first. The vines are supported by placing brushwood along each row, forming an arch, over which they may grow. The advantages this method presents are, that the fruit is always clean and straight, of a uniform color on all sides, and can be gathered without incurring the danger of injury to the vines by trampling on them.

The leaves of Amaranthus melancholicus are eaten as a vegetable, being boiled as a spinach. A species of Sagittaria also appears to be used for the same purpose, as I observed, in one or two instances, small plantations of it in the corners of Rice fields. The large fleshy roots of the Nelumbium are a staple article of food in the winter season.

One of the most attractive rides in Yedo, in which you see the chief business part of the city, is to the temple of Asacksa. In going there, the roads around the Tycoon's and Daimio's residences are usually chosen, by which means you are enabled to have a good view of the moat and embankment that surround them. The space in which these residences are built, is an elevation of land considerably higher, in most parts, than the land immediately surrounding. The moat, which varies in width from fifty to one-hundred and fifty feet, has been dug at the base of this elevation, and is level with the streets on one side, but presents a high and steep bank on the other. In some places it is filled with Nelumbiums and other aquatic plants, making, when in flower, a splendid show. The bank on the other side of the moat is covered with grass, nicely kept in order, with occasionally a few trees planted. The top is surmounted with a row of trees, (mostly Pines), some of which have their branches extended downward, relieving in a great degree the formality which such works usually present.

Surrounding the temple at Asacksa are extensive grounds, in which are included various shows, and places for practicing archery. The most interesting part to me was that portion occupied by a florist's establishment. Here you find every thing kept in the neatest order. The plants are arranged on elevated stages, shaded with rolls of fine bamboo laced together, forming open mats, which can be rolled up when desired. They are much superior to a frame work of lath, sometimes used by us for sheltering plants from the sun. The principal stock of plants consists of those most suited to Japanese tastes, viz., dwarfed Pines and Retinospora, Sago Palms, variegated Podocarpus, Aucubas, Selaginellas, etc., many of which are held at what we would consider very high prices. I was surprised to find growing here three distinct varieties of Verbenas, which I was not aware had been introduced; also Jasminum grandiflorum, and a species of Franciscea. With these exceptions, together with a dwarf variety of Sago Palm, there was nothing of especial interest that I had not seen offered for sale in Yokohama. The grounds contained several species of trees unknown to me, which I would have purchased if I could have obtained small specimens. A pond full of scarlet Nelumbiums, the flowers standing on tall foot-stalks above the foliage like immense tulips, had a very fine effect. The Japense gardeners cultivate a number of varieties of them having double flowers, and with various markings and shades of color, some of which I hope to be fortunate enough to send home alive. The scarlet Clerodendron seemed to be a favorite, and large plants of it, grown in ornamental porcelain pots, made a fine show. The Japanese do not entertain our objections to growing plants in glazed pots; all their fine specimens are grown in them, and I certainly have not been able to see that they do not thrive equally as well as in any other kind.

One day was devoted to a visit to the gardens at Dangozaka and Someia, two villages adjoining each other on the outskirts of the city. We took an early start. Two friends, and the usual escort of mounted officials, constituted our train; and although we considered the latter more ornamental than use-

ful, the government, under real or assumed regard for our safety, insisted on their attendance.

One side of the road which unites the two villages is bounded almost entirely with small nursery grounds. Those at Someia are larger than those at Dangozaka; but at none of those visited did I see a finer collection of plants than at Osacksa. After visiting five or six the guard became rather impatient, as I expected they would, at my frequent stoppages, and inquired what I wanted. I explained to them that I had a garden at home, and wanted to see, for the purpose of purchasing what new plants I could find. As is often the case, they, not being interested, could not appreciate my motives; and as it was already past noon, and very warm, with a long ride before us, I agreed to return if they would conduct us home as far as possible by some country road, instead of through the city. To this they assented, and conducted us back through a series of charming wooded roads and lanes lined with hedges on either side, and through the city within the second moat of the castle, whereby we had a more extended view of that part of Yedo.

None of the gardens visited, or those seen on my ride, were very extensive, the largest containing but an acre or two of land; yet I am satisfied that there are larger establishments somewhere in the neighborhood, where trees are the principal objects of culture. I am impressed with this opinion from the quantities brought to Yokohama for ornamenting the gardens of foreign residents, and for sending away.

Another ride we took was to a celebrated tea-house on the other side of the river from Asacksa. This part of the city is intersected by numerous canals of great value for the easy transportation of heavy goods in a country where wheeled vehicles are of the rudest description. Above the city, almost as far as the eye can see, is one continued Rice field, which in former years was an immense marsh, redeemed from the overflow of the river by a wide dyke. The top, in most places planted with trees, constitute the road along which you ride. The amount of labor employed to bring into cultivation the almost innumerable Rice fields all over the country is not to be estimated, but are monuments of the toil of the people; and if neglected but for a few years, would become covered with a rank and noxious vegetation. Near the tea garden we visited the residence of a retired merchant, who had the reputation of possessing a beautiful garden. In this I was disappointed, it being only of a larger size than ordinary, but presenting no remarkable features, either in style or its contents. Our disappointment in this respect was compensated by the kind hospitality of the aged proprietor and his family, who entertained us with tea and fruit, and did every thing that Japanese courtesy demanded to render our visit agreeable.

One of the horticultural attractions of Yedo is the large Wistaria spoken of in Fortune's "Visit to Japan." Unfortunately, it was too late to see it in flower, but, judging from the still remaining flower stems, it must present a rare object of beauty when in blossom. It is trained on a flat trellis overspreading an area of more than 400 square feet.

In our rides about the city, we frequently met with horses laden with cut flowers. in which an extensive trade is carried on. The varieties are such as are most abundant at the particular season of the year, and just then consisted of Chrysanthemums, Wahlenbergia sinensis (?), a species of Veronica, and a few others.

In the rear of the legation residence is a small wood, in which is a number of large trees of Torreya nucifera. It is a very handsome species, growing to a height of fifty feet. If it proves hardy, it will be a valuable addition to our list of evergreens. The large tree of Ginkgo biloba, preserved from the fire that burned down the buildings last year, still retained the attractions it had when seen on my first visit. When better known with us, the Ginkgo, as an ornamental tree, will meet with a more extended cultivation than it now receives.

The opportunities for information on horticultural as well as other topics, are still so limited, that only a very superficial knowledge can be attained. It is to be hoped that the exciting events that have lately taken place will hasten the day in which free intercourse with the people in all parts of the country will be permitted.

WATERING PLANTS.

BY F. PARKMAN, JAMAICA PLAIN, MASS.

The extreme drought that has prevailed here for some time past, has put us to our last resources to keep our plants in health or even alive. A plan occurred to me which on trial has answered very well in the case of single plants, which were especially valuable or impatient of drought. It consists merely in filling a common wine bottle about four-fifths with water, quickly inverting it, and thrusting the neck into the earth at the root of the plant. The water occupies from twenty-four to forty-eight hours in escaping, and the soil around the root of the plant is kept in a state of equable moisture without the surface being wet in the least. Thus the caking of the earth, and all the mischief resulting from it, is avoided. After two or three days the bottle is filled again, and the neck thrust into the same hole as before.

If the bottle is wholly filled with water, it empties itself much more slowly. The water will filtrate drop by drop into the soil, and small bubbles of air will rise to take its place. It is much better to leave at first a small quantity of air in the bottle. The alternate expansion and contraction of this air with the changes of temperature, will surely but gradually empty the bottle. With every rise of temperature the air expands, and a corresponding quantity of the water is emitted into the soil. With the coolness of evening, the air contracts again, causing a partial vacuum in the bottle. To supply this vacuum, small quantities of air, drawn through the pores of the soil, rise in bubbles into the bottle, until the density of the air within is equal to that of the air without. With the warmth of the sun, the air expands again, and thus the process is repeated until the bottle is empty.

A quart of water gradually applied in this way to the roots of the plant, will answer a better purthan three times the quantity poured at once on the surface.

ON THE LAWS OF DEVELOPMENT AND PROGRESS.

BY DR. J. STAYMAN, LEAVENWORTH, KANSAS.

There are certain inherent qualities in every plant, by which it retains its distinctness and character. These are imparted to the offspring upon the principle of "like produces like" or similarity.

The law of development is a law of progress: it unfolds the latent qualities which have remained dormant for the want of a proper stimulus, but cannot produce or develop that which does not exist within themselves. As "no effect can be greater than its cause," consequently qualities inherent only are susceptible of improvement and progress. Health is not a quality, but a positive state free from disease, and cannot be increased or improved, for when the conditions of disease cease, health is necessarily the result.

The same may be said of hardiness. It constitutes vitality and strength of constitution, and is a positive state, not to be increased or improved. Therefore, no plant can impart health and hardiness to their offspring unless they possess them; and if they do not, beyond their parent's capacity, though the qualities may, yet seldom are, except at the expense of their constitutions.

According to this theory, the original varieties were more hardy and healthy than the improved sorts, because they were not inoculated with the virus of disease and degeneracy.

Hereditary disease is like a fermentation, the more of the virus you incorporate into the constitution, or the more you cross or hybridize with it, the worse it becomes: it is a disorganizing and decomposing agent, hastening them rapidly to destruction. For this reason, the crossing with those of close affinity frequently leads to debility and degeneracy, the stock not being healthy, but having similar diseased tendencies; while on the contrary, the very best results would have followed had they been healthy and possessed desirable qualities. It is difficult to conceive of a permanent improvement in excellent qualities otherwise than by crossing with those of *close affinity;* but they must be healthy and it should be continued through several generations to fully develop the hidden qualities, and cross out those undesirable. Now if the progeny cannot inherit a more healthy and hardy constitution than their parents, then they cannot inherit a darker color because health and hardiness is in proportion to the amount of heat, electricity and carbonic acid absorbed, and this in relation to their *color.*

If our theory is correct, light colors come from darker colors, but dark never from light; they become lighter in proportion as they become diseased and degenerate, as may be seen in unhealthy plants, which have lost their constitutional vigor by neglect or from any other cause. In illustration of these principles we will take the Catawba grape, which is very subject to disease, and appears to have degenerated from some cause which I shall name the want of *color.* It cannot absorb heat sufficient to withstand the sudden and extreme change of temperature of 60° in twenty-four hours, neither can it endure over a certain number of inches of rain in its growing season, or other vicissitudes of climate. Now this is a hereditary deficiency in its constitution, which cannot be remedied under those contingencies; but it might be under more favorable circumstances. Neither can it produce a seedling which will be more healthy and hardy, or of darker color, which will succeed any better under like conditions, (unless crossed with a more hardy sort), which may be seen in some of its offspring, as the Anna, Diana, Mammoth Catawba, White Catawba, Mead's Seedling, or even the *Iona*, and numerous other seedlings which might be named, all of which are as subject to disease as their parent. (I know it is claimed that the Iona is exempt from disease, but time will soon prove who is correct, for I have

a vine trained, the aggregate growth being upwards of 100 feet, which has dropped its leaves, and shows more marked symptoms of disease than the Catawba, which is by its side.) In the above seedlings we perceive various qualities: some good, a few excellent, and others worthless; but in no instance has their general color been darker, or their health, hardiness and constitution been improved. The same law holds good in respect to any fruit or flower, and, as a general rule, when a seedling of better quality is produced, it is more delicate in its constitution, and requires more care and attention, and higher cultivation, as the Delaware, Clara, Rebecca, Diana, Allen's Hybrid, Iona, etc.

The theory herein advanced explains why light colors and variegated plants are produced from darker colors, because, as the seedlings degenerate and become diseased, they change and variegate to light; this constitutional defect becomes, through several generations, hereditary and permanent, and when the *types* become *fixed* they can never revert back again, because they have no power within themselves to absorb sufficient heat, electricity and carbonic acid,—they become paralyzed and incurable, their characters become local and conditional.

In corroboration of this theory, the variegation and change to light color has become of more frequent occurrence latterly than formerly, showing conclusively that it is a secondary effect, and not primary. An instance of this kind took place under my own observation, in a native Willow, on my own place, which threw up a sprout from the root which was variegated most beautifully in all its foliage to lighter colors, which was supposed by some to be a new variegated variety; but perceiving its origin, I knew it was diseased, and in a few weeks its existence ended; but could its disease have remained constitutional, as in seedlings, it might have continued as a new variety.

Plants and trees are not only more hardy and healthy when of a dark color, but transplant better and give more general satisfaction in growth, flowers and fruit, and are more profitable, as may be seen in dark-colored Apples, Pears, Peaches, Cherries, Plums, Apricots, Grapes Currants, Gooseberries, Raspberries, Blackberries, Strawberries, Rhubarb, Potatoes, Radishes, Roses, Verbenas, Dahlias, Geraniums, Evergreens, and so on throughout the whole vegetable kingdom. These colors are more popular because they have succeeded better in more varied locations and under more ordinary circumstances, consequently have more merit than light colors have, or even can have. As quality is sometimes more desirable than quantity, it should be our aim to overcome these natural defects as far as possible.

To those who have time, patience and perseverance, and who can bestow the proper care and attention upon those negative varieties, we make the following suggestions in harmony with the views herein advanced:

As the absorption of heat, electricity and carbonic acid is essentially necessary to their full development, and those plants being deficient in those powers, they should be planted in the warmest and most favorable locations, with free circulation of air, away from heavy growths of timber and other vegetation which has a tendency to absorb their heat, etc., with a well-drained subsoil, and left to grow according to their natural inclinations, without any pruning, save the little needed to keep them in good form, that they might not be restricted in their growth and absorbing powers. Keep the plants well cultivated by frequently stirring the soil, and endeavor to keep them *dark green* by every process available. If this cannot be done naturally, for the want of location, soil, etc., then it should be done artificially.

Many facts might be given in illustration of these principles, such as the health, longevity and extraordinary productiveness of trees and vines, when grown naturally, and their debility and general failure when frequently and severely pruned or dwarfed. To avoid a misunderstanding upon this subject, when health and hardiness is not absolutely necessary, (as in some favorable locations, etc.), those of a negative character may succeed well and be profitable, as great mental productions may sometimes come from diseased and debilitated constitutions (under favorable circumstances), but certainly neither is an argument in favor of debility and disease.

CULTIVATION OF THE GRAPE AROUND CINCINNATI.

BY X.

I wish to make a few remarks on the cultivation of the Grape under glass. What is the reason that, with all the lights before us in the shape of books, horticultural societies, etc., there is still such ill success. I have lately visited several of the principal establishments around here, and none of them come up to the old standard of grape growing; and I might say that most of them are failures. I have come to the conclusion that the old established rules are wrong for this country, even under glass. In the first place, there is too much syringing; in the second, there is too much stopping: the syringing encourages mildew, which of late years is the greatest enemy to contend with in grape culture; stopping would not do so much harm if the finger and thumb were used more instead of the knife,—but generally there is too much work on hand, and the vines are neglected, and then the knife has to come in play, and the vine gets too sudden a check for this hot climate.

Now I have charge of a vinery that has long been the pride of the neighborhood. During the winter of 1863-64, the vines were badly injured by the severe frost, and some of the old vines as thick as ones wrist were cut down to the ground,—last summer they were badly mildewed. I took charge of them last fall, pruned them in December, and protected them with straw. This spring they broke rather weakly, but have done well since. I stopped them after the fruit was set about four leaves from the bunch, with the finger and thumb,—no knife. After that I was too busy to give them any regular attention, merely pinching out a shoot here and there, where they were the most crowded; but I never syringed the first time. The house is a lean-to, and there are vines planted along the back wall as well as in front,—and I have given them a thorough watering, sometimes once, sometimes twice a week. The mildew made its appearance before the fruit was as large as peas. I spoke to my employer about it, and he got me five pounds of sulphur, and I sowed it all over the house and the vines, which stopped it. When the fruit was stoning it showed itself again, but another dose of sulphur, of about two pounds, entirely banished it,—and the Red-spider has no show at all.

I have made these few remarks in hopes that some more able and practical cultivator may take up the subject and give us more light.

OUR NATIVE FERNS IN GLASS SHADES.

BY DANIEL BARKER, DOVER PLAINS, N. Y.

No study can possibly be more interesting, or I may say fascinating, than that of our beautiful native Ferns,—and it is very gratifying to know that the study and desire to cultivate them is becoming quite popular. More particularly amongst our lady amateurs, with whom there is a great desire for beautiful and graceful forms of foliage. And in no class of plants do we believe can such a combination of the beautiful and graceful be found as in the Ferns, and explains the love for them which has sprung up within the last few years. Their general easy culture—with their varied and lovely form, must insure for them the love of all persons of pure and refined taste.

There are many who are ardent lovers of Ferns, but have no place to cultivate them in the garden, yet would like to have a few growing in 'Glass Shades' under more immediate inspection, which, for studying their habits, and as ornaments for the parlor or sitting-room, but few things in our opinion can excel.

I will endeavor to describe a method by which we have succeeded in growing many of our beautiful native kinds in a most interesting manner. We first select a rustic vase, seed-pan, or flower pot, (the vase is altogether preferable). It may be of wood, artificial stone, marble, or terra cotta; size in diameter from 6 to 12 inches—beyond this glass shades are objectionable—to insure efficient drainage a double bottom is essential: the kind we use is perforated zinc, placed upon supports, leaving a vacuum between the two bottoms of about an inch. In placing the plants in the vase, we invariably grow and *retain* them in their pots, filling between with moss, and covering the entire surface thickly with the beautiful native "Selaginella apus;" thus the entire surface becomes a fairy carpet of the most lovely texture imaginable. By this arrangement, a complete change of plants can be made at any time. Our method is to have a duplicate vase, or pan, so that, should any of the plants under the shade become shabby from natural decay or otherwise; we fill our duplicate, cover it with our favorite Selaginella, and place the glass over them. As to watering, it is only necessary to part the Selaginella with a small pointed stick upon the top of each pot about once a week, and apply rain water to such as require it, being careful that the plants do not become too dry, or that they are saturated. The surface will require to be sprinkled with a fine rose watering pot about twice a week. After watering the shade should be left off an hour or two to allow of the escape of exhalation.

In placing our stands in the room, we are careful to have them where they have the morning sun about one hour during each day.

The instructions thus given are not of a general character, they only apply to such cases as are to be stocked with some our of native Ferns, the names of which we subjoin, and are intended solely for the guidance of the amateur, who, like ourselves, is an admirer of that most beautiful part of our glorious creation. We venture to add that no one who may devote a small portion of his time to the study of Ferns and Mosses, and the collecting and planting them in cases will ever have cause to re-

gret it, for in their homes—humble though they may be—they may enjoy a scene such as no artist can paint,—a scene which will ever be suggesting someting beautiful and joyous to the mind, and one which cannot fail to lead us from nature to nature's God, and cause us to exclaim, the hand which made them is divine.

To those who are interested in growing our native Ferns, in glass shades, we would name the following beautiful kinds, well suited for the purpose:

Adiantum pedatum—Fronds from 6 to 12 inches high; one of the most delicate and graceful of all Adiantums; requires a shade 12 inches high. For a central plant under a shade, we consider this beautiful kind unsurpassed.

Cheilanthus vestita—Fronds from 4 to 6 inches high. A very interesting Fern from Virginia, and often found north of that State.

Cheilanthus tomentosa—Fronds from 9 to 12 inches high. A very elegant and interesting Fern, also found in Virginia. In our rambles in search of Ferns, we have never yet been so fortunate as to find either of the above beautiful kinds; presume that our Fern loving friends in Philadelphia or Baltimore are well acquainted with them, and can furnish them if called upon to do so.

Woodwardia angustifolia—Fronds from 6 to 10 inches. A very interesting and beautiful Fern; requires to be kept rather moist while in a growing state. Rather rare.

Asplenium trichomnes—Fronds from 4 to 8 inches. Evergreen. One of the most elegant of native Ferns for cultivating under glass shades. Cultivated upon a handsome piece of rockwork, and covered with a shade about 10 inches in diameter, and the rockwork planted with the dwarf-growing kinds of Lycopodiums or Selaginellas, it forms one of the most interesting and easily managed ornaments (either for summer or winter) for the parlor or sitting-room.

Asplenium Ebenum—Fronds from 4 to 10 inches. A very distinct and beautiful Fern, growing in tufts; it is readily distinguished from other American Ferns by its upright pinnate pinnæ, and black shining rachis.

Polystichum aculeatum—Fronds from 6 to 10 inches. Evergreen. Very rigid dark green fronds. This beautiful Fern does remarkably well under a glass shade.

Polystichum lonchitis—Fronds from 6 to 10 inches. Very rigid, and one of the most beautiful of our upright-growing Ferns. This kind is rather rare.

Woodsia Ilvensis—Fronds from 4 to 6 inches. A very elegant little Fern, the fronds of which are of a light green above, thickly covered with chaffy bristles underneath. Very easily managed under a glass shade.

Woodsia glabella—Fronds from 2 to 6 inches. A very elegant Fern for the glass shade. We have never yet been so fortunate as to find this little Fern upon its native rocks.

Cistopteris fragilis—Fronds from 6 to 10 inches. Very delicate and pretty. We have this summer found some very beautiful varieties of this Fern.

Athyrium filix fœmina (Lady Fern)—One of the most elegant of the large-growing native Ferns. Almost too large for glass shades, for which, however, small plants may be used.

Camptosorus rhizophyllus (Walking-leaf)—Fronds from 4 to 12 inches. This most singular and beautiful Fern is, to me, one of the most interesting of all the numerous order 'Filices.' We prefer to grow it in pots upon pieces of limestone rock, with a portion of decayed vegetable matter, and placed under the shade, where it will become one of the most interesting of plants, usually cultivated in such a manner. The fronds are evergreen, growing from a tufted caudex, lanceolate in shape, with an auriculed heart-shaped base, the upper part being prolonged into a thread-like runner, which *often takes root at the apex and forms a new plant.*

Allosorus atropurpureus—Fronds 6 to 8 inches. Coriaceous, of a pale green color; rachis very dark shining purple. This rather rare and most interesting kind is very distinct from all other American Ferns. Its striking habit makes it worthy of general cultivation.

To the above might be added names of several more of our native Ferns; but those given form a very good general collection.

DWARF PEARS AND VINE-GRAFTING IN THE OLDEN TIME.

BY J. S. L.

"Is there any thing whereof it may be said, See, this is new? it hath been already of old time, which was before us." So spake Solomon in his day, and so may we in our time, if we turn to the story of the doings of busy wights who have preceded us in the garden and the field. Says old Surflet, in his "Booke of the Countrie Farme," written three centuries ago, "Some doe ordinarily plant stockes of the garden Quince-tree, and graft Peare-trees thereon, as also Apple-trees and great Peaches, the fruits whereof looke as if they were Peach-plums; but they must be grafted half a foot within the ground, because they never have any faire trunke, and being grafted thus low, the graft will put forth roots of its selfe, which will make it endure and continue the longer time."

He adds, also, that "the Quince-tree is very commonly used to graft other trees upon, because they being grafted thereupon, doe continue and endure longer, and beare a more delicate fruit, than if they were grafted upon trees of their owne kind."

So we see dwarf Pears were of old, and not of modern time, and that in the days of Queen Bess, and Shakespeare, they were not without them, though we doubt whether they ever saw the Apple or the Peach grown upon the quince, feats which the skill of the moderns have not realized.

"Some have likewise found out a way to graft the vine, which is a very singular and profitable thing, for having a vine that is not of a good plant, you may, by grafting of it, sooner come to have fruit, than by pulling it up, and planting another in its place." Our venerable friend would not graft upon the root, but gives us a very long-winded description of his method of splice-grafting upon the ends of shoots laid beneath the soil, by which he proposes to have many plants rather than one or two at most, which could be grown from the old stock or root. His after treatment is, "Afterwards acquaint your graft with little stakes, as is used in propagating, and these impes doe thrive and grow as well as the propagated, and beare fruit as soone."

"But, you must observe, that it is no fit time to graft the vine except in the month of February, in warme places, and in March in cold places; and that when the vine sheddeth a kind of thick liquor, and not thin like water, the like may be done in May, and in the beginning of June, when the sap or juice of the vine is all fallen; but in the meantime, you must keepe the grafts that you would graft in cold and shadowed places, that they may not put for buds in spring." All which is orthodox, and by some supposed quite modern; but the following is neither sound nor recent: "Some say, likewise, that if you graft a black vine upon a Cherrie-tree, that then the vine will bear grapes in the spring, because the stock being of a timely [earlier] fruit in respect of the nature of the graft, doth hasten to bring forward the fruit."

As respects the influence of the late ripening stocks, he asserteth that, "if the Apple-tree be grafted upon a Quince-tree, the apples will prove to hang upon the tree till November, and will take so much after the nature of the Quince-tree, as that they will keep two years."

Again, to have fruit all summer time till the beginning of November, "Graft one Apple-tree upon another; and likewise in Goose-berrie-trees and reclaimed Mulberrie-trees!"

These remarkable results may be attained only by grafting "in the increase of the Moon, and yet better three or four daies before the first quarter: for how many daies the moon is old when it is grafted, so many years will it be before the tree doth bring forth fruit!"

Much does this old book abound with descriptions of the wonderful transformations caused by budding and grafting fruit trees, etc., with others for which we now know they possess no affinity, and with which they never could have formed a healthy union, such, for instance, as the following: "Graft a Plum-tree graft, or any other fruit tree graft, upon the Figge-tree, and you shall have your fruit to grow without blossoming;" yet, while reciting these vagaries and crudities, he seems to have a clear view of the truth, when he says: "The grafting which is performed to a graft upon a tree correspondent and answerable to the nature of the graft, proveth of most beautiful growth, and most fruitfull, and his fruit most durable, which falleth not out when this correspondence, sympathie and fellowship is wanting."

NOTES ON GRAPES.

BY J. P. NORRIS.

During a recent visit to Wilmington, Delaware, I called upon Mr. John Landers, whose success in growing Grapes under glass is the admiration of all who have seen his houses, and whose reputation is not confined to that city.

What first took my attention was the famous *Calabrian Raisin*, fruiting magnificently. The vine is rather young to bear heavily. Several bunches, however, which we noted, each measured 12 inches in length. The *Cannon-hall Muscat*, although it had suffered from being placed in too cool a house, presented berries of immense size. The *White Frontignan*, *White Nice*, *Golden Muscat*, *Muscat of Alexandria*, and the old, but unsurpassed *Black Hamburg*, were all growing to perfection.

Mr. Landers has started two new houses this spring, and planted them almost entirely with white grapes, as he thinks they succeed best in cold graperies.

I also noticed a fine double-span Grapery, belonging to Mr. Howland. This is hardly ready for any report, for just as it was nearly finished, a severe storm blew it over, and it had to be rebuilt.

Mr. Gause also has fine grapery, and which promises an abundant crop.

The Gardener's Monthly,

PHILADELPHIA, NOVEMBER, 1865.

☞ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

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EXTENSION OF GARDENER'S MONTHLY.

At this season we may be pardoned for reminding our friends that the success of the *Gardener's Monthly* is the fruit of individual exertion. Unlike a strictly Agricultural journal, the publisher cannot tell where to expect subscribers, hence all the usual rules of advertising publications fails the Horticultural publisher. Farmers may be looked for everywhere; but only the lover of gardening can tell who, amongst all his scores of neighbors, holds a fellow feeling with his own. For making known the existence of our journal to such young horticulturists, we shall be very thankful to our friends.

The *Gardener's Monthly* occupies a field peculiarly its own. Its aim is not to teach gardening. The new beginner gets his garden library at the outset. He buys McMahon's Calendar, Buist's, Breck's, Bridgeman's, Fuller's, Chorlton's, Leuchar's, Meehan's, Burr's, Barry's, Downing's, or other standard works, which teach all that is practically known of the several branches of gardening, and all minutely detailed up to the several authors' times: and to repeat all over again what these books tell so well, soon renders a periodical unentertaining.

But our object is to inform the lover of gardening of all the LATEST IMPROVEMENTS IN THE ART, and we believe it is on this account, more than to any peculiar brilliancy of our pages, that our magazine has become an absolute necessity to every genuine horticulturist in the land.

We believe we can truly say, that since the establishment of the *Monthly* there has not been a new or improved mode of culture, principle of science that could be applied to horticulture, mode of pruning or propagating; new plant, fruit, vegetable, tool or implement, that may have originated in any part of the world, and might be of interest to Americans, that has not been promptly laid before our readers. Fashion and taste, art and science,—all sources of rational enjoyment that may have any bearing on rural pursuits,—have been watched in thir progress, and our readers have been made sharers therein.

The world will not stand still, least of all the horticultural world; hence, what the watch is to mankind in general, our *Monthly* is to the wide awake Horticulturist.

Valuable as our magazine thus becomes to the practical and progressive man, it is no less of immense benefit to the commercial community. Those who grow heavily of certain articles, have here the very best medium through which to make them known; while the small grower, who has not enough to advertise, is afforded a tolerably clear idea of the state of the market, by the range of the advertised prices. When prices rule low, and an article is advertised freely, he prepares his stocks accordingly. When high, and evidently scarce, he judges how to prepare for "the good time coming," when even a nurseryman may get a living price for his goods.

There are of course a few men in all trades who are jealous of "trade secrets," who would rather all men should believe there were "no other house but theirs," and who would much rather other firms should regulate prices by *their* stock, than by the inevitable laws of trade, "supply and demand;" but we think gardening and the nursery trade more enlightened in their views than most others, and we meet so very few of this mistaken class of men among it, that we think we may safely say that the whole body of American Horticulturists is wholly friendly to the *Gardener's Monthly*, and we feel no delicacy in asking them, during the coming "magazine season," to exert themselves a little to make our magazine as widely known as possible.

PRESERVING GRAPES.

To many persons who are just entering on the business of raising fruit for market, the first difficulty is to find a good market, where their produce can be certainly sold as soon as ripe. Hence the objection has been made to starting a new beginner at Strawberry raising, that the fruit must be either sold or spoil the moment it is ready. It was also considered an objection to Grape raising at one time; but this obstruction is gradually being cleared away by the discovery of means of preserving, and also by the fact that some *varieties* are particularly 'keepable.' The Diana, especially is coming into request as a keeper,—we think others may be found equally good if properly tested,—and this is the season to suggest experiments with different kinds for this purpose.

HEAT IN ITS RELATION TO DISEASE.

In another part of this number, we publish a highly interesting article from the pen of Dr. J. Stayman, on "The Laws of Development and Progress," which will receive the careful attention of our more intellectual readers.

We have before endorsed the views of Dr. S., given in another journal, on a similar topic; besides, as our readers are aware, having held nearly the same opinions, although not so well matured, before the publication of Dr. Stayman's ideas.

To our mind, the best flavored fruits will always be among the pale-faced varieties, while mere vital energy and hardiness will be the chief characteristics of the dark-skinned races. With this view of the case, we think Horticultural and Pomological Associations should, in their offer of premiums for the best new varieties of Grapes, divide them into colored classes: the best dark; the best white; the best amber, chocolate or pink varieties.

We felt the want of such a classification particularly at Fort Wayne, where the writer, in connection with Dr. Warder and J. J. Thomas, acted as the Fruit Committee, and on the "best new Grapes," where but the Adirondac and the Iona were in competion; and the decision being on the point of beauty and flavor alone, the Committee were unanimous in awarding the premium to the Iona,—and yet we are sure, if the planting but a single Grape-vine only were left to each member of that Committee, and the selection to be limited to the two Grapes named, the one planted would be the Adirondac, and that solely on account of suspicion that no grape of the Catawba class of color would prove any safer from disease than others already disseminated of that character. At any rate, speaking for ourselves, while we would sooner *eat* an Iona, we would prefer to *plant* an Adirondac, if we wished to feel certain of getting regular and good crops, because we have more faith in a good darkcolor resistingunfavorableinfluences. This, however, is no more than most persons would do in many other cases. We all know how every one prefers a White Muscat Grape to a Black Hamburg; yet in planting a vinery most persons would set out three-fourths of the latter variety.

Dark color is a better security against changes of temperature than any other shade,—and in this connection of change of temperature, the subject of trellisses may perhaps bear some discusion.

One of the most disastrous cases of Grape failure we have ever seen, is on the grounds of Thomas M. Harvey, in Chester county in this State. Mr. Harvey has a large plantation of the Concord Grape, from which, if we recollect rightly, he has in former times received near $2000 for the crop. This year the crop is not perhaps worth that many cents. There seems little to the general eye to account for the failure: every thing that thought or skill could suggest to promote healthfulness had been employed, and in strength and general vigor no grapes could be more perfect. But the mildew and rot had got far ahead of even their common reputation, and left but very little for Mr. H.'s share.

Mr. Harvey's trellis is a very peculiar one. The vines are planted in long rows across the vineyard, the rows perhaps eight feet apart. The trellis runs along each row, but instead of standing erect, as in the usual way, the top of each line of trellis leans over, connecting with its neighbor, forming a ∧ along the whole line of a double row, one row trained over the north face and the other over the south face of this sloping trellis.

Now it is quite likely that this heavy mass of foliage keeps the space enclosed by the trellis very cool,—how cool could only be tested by a thermometer,—and while the outside would be very warm, on a hot day, the two different and extreme temperatures meeting near the leaves and fruit of the vine, ought to have a very injurious influence, which even the strong hardy constitution of the Concord Grape-vine is not capable of resisting.

Whether this is the true explanation of this particular failure or not, there is no doubt that the more regular the temperature can be maintained, and the less the changes of heat and atmospheric moisture to which the plants are subjected, the more perfect will the success be; and whatever tends to this result,—whether in the location,—the means taken to protect against atmospheric changes,—the form of trellis,—or the selection of varieties as regards color, should be carefully studied.

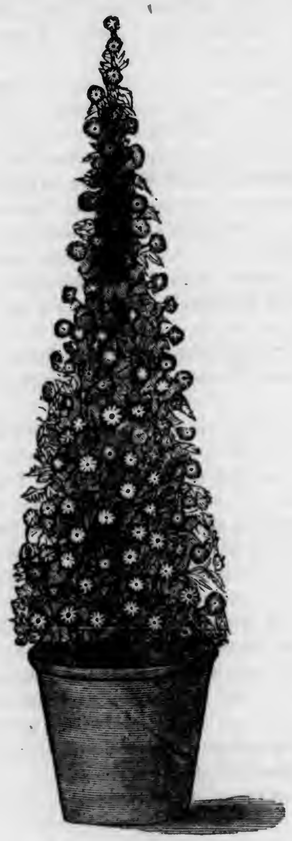
TRAINING FLOWERS IN POTS.

We think it would be a good idea for our Horticultural Societies to offer premiums for flower-training. We see many specimens so arranged that only a few dozen can occupy a whole house. This is all wrong. The idea should be to get as much variety into a house as can be consistent with perfectly grown specimens.

The Pennsylvania Horticultural Society have made a move in the right direction, by limiting the size of the pots. Let them still further initiate a reform *in form.*

The Chrysanthemum particularly, as often seen, is liable to this serious over-grown objection. We

annex a cut of one which was on exhibition in London last fall, which we take from the *Gardener's Weekly*. We are quite sure this specimen is not only entitled to praise for its size, but also for the skill exhibited in the training.



As this is the Chrysanthemum season, some of our gardeners may lay up from this a hint for another year.

Of course this plan can only be adopted when the plant is trained on the single stem system. The plant is no doubt started early, and kept growing strong by manure water, the "finger and thumb" doing the rest.

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.

Letter from Marshall P. Wilder.—It will gratify the numerous friends of this veteran pomologist, to learn from the following note of the improved condition of his health. It is to be hoped he may be spared to us for sometime longer yet.

The fruits gave us much pleasure. With due respect to the opinions of those friends who doubt the hybrid character of Rogers' Grapes, we entirely agree with Mr. Wilder, that they are true hybrids. We have had no experience personally in hybridizing grapes; but we have in numerous other things, and from what we have learned of the results of hybridizing, and from what one may expect to result from such experiments, we feel tolerably sure Mr. Rogers' has "made no mistake," and that what he has given us is highly encouraging for others to try on the same track.

The Pears were very welcome as a few of them were not familiar to us, and it was particularly a treat to have the opportunity of making their better acquaintance:

Dorchester, Mass., Sept. 30th., 1865.

My Dear Sir: A few days since I sent samples of Pears and Grapes, most of which I presume you have seen before. In regard to the Grapes, Rogers' Hybrids, I wish you to test the various numbers with Concord, Diana, or any other you please, both in regard to flavor, texture, skin and juice. You will perceive, I think, that Mr. Rogers' by one effort bred out all, or nearly all of the native aroma from Nos. 4, 41. 43, and 44. These were crossed by the Black Hamburg or Sweetwater, and it is interesting to notice that, by impregnating the No. 4 with Muscat of Alexandria, the form, texture of flesh and flavor of the latter have been brought distinctly to view (this is in No. 45, a few berries only sent).

Some of the grapes have been gathered two or three weeks, and are a little shrivelled by exposure at exhibitions and elsewhere.

The R. No. 1 is generally rather late here, but has always ripened in former seasons, and is better now than ever before. I may send you a few more of these soon.

Thanks to a merciful Providence, my health has so much improved, that I presided yesterday at the

banquet of the Norfolk Agricultural Society, my 17th year. My physician says I shall ere long have a new lease of life.

Iona Grape.—We have the following note from Dr. Grant:

"I have been very remiss in not sending you samples of Iona fruit before, and I regret my inability to send you larger bunches at this time, but cannot, as all have been used in exhibitions. These however will give you a correct idea of quality. The Israella have all been used, therefore I can send none.

Should your opinion agree with others in regard to the high character of the Iona, we shall hope to learn your convictions through the columns of your paper. It certainly must be for your interest to lead the minds of your readers aright in this matter."

[To say that the samples were *delicious*, is but literally to express the flavor of these berries. We have a weakness for the flavor of the foreign grape, but should hesitate which to prefer, a Muscat of Alexandria or this. We have never had any doubt as to the flavor of this variety. We have occasionally had Catawbas quite as good—but rarely indeed equal to these, especially of late years.

We regard the value of the Iona entirely as a *comparative* question. If it will generally prove earlier, more free from disease, in other words more *reliable* than Catawba, there need be but one one opinion about its being the best grape ever known here. Nothing but a few years more of the extensive trial it is receiving can decide this point.]

Hybrid Grapes—*From Jacob Moore, Rochester, N. Y.*—Specimens of *Diana Hamburg*, from Diana crossed with Hamburg. If this is really from a seed of the Diana, it is the most remarkable hybrid we ever saw, as it takes so much after the male parent in appearance and general qualities, which is very unusual with hybrids. It has all the virtues of the foreign, and if it prove to have none of the tender vices, will be one of the richest boons Grape-growers have ever had.

Spotted Globe—Also from Diana and B. Hamburg, is a paler and smaller-sized berry, with a remarkably smooth clear skin, as tranparent as a Sweetwater, so much so that by the sight alone one would refer it at once to the European species; but the pulp is so firm, that on *tasting* the native principle is evident. It may prove a hardier variety than the other, but not equal in quality, good as it is, however.

Improved Clinton.—This has a peculiar flavor we know nothing of in pure native grapes, and reminds us of imperfectly open-air ripened foreign grapes that we have tasted in northern Europe, where they do not ripen well. Berries larger than Clinton, but of same color.

White Musk.—From Isabella with some white foreigner. White, small berries, but too ripe to form any opinion.

Mr. Moore has our best thanks for this opportunity of examining these curiosities.

Tilden Tomato.—We have received from Mr. A. W. Harrison a basket of this variety, and have tested them in a variety of ways, satisfying ourselves that they are the best Tomato out.

When first before the Horticultural Society this year, we thought we had seen Tomatoes as smooth, clear, and heavy as these, and we said so; but the testing of them tells more,—and as the chief of our culinary bureau urges us to "plant nothing but Tilden next year," we suppose she is also of our belief.

Gros Colman Grape.—We have received the following from Mr. J. E. Mitchell:

"I left at your house a bunch of Gros Colman Grape, which I think will prove to be a good late grape, and very saleable, on account of its size and beauty. The flavor is, I think, equal to B. Hamburgh, which I sent you to compare it with.

The part of a bunch of Maxatawney will show the effect of culture under glass of our native sorts,—does it improve them?"

[We are much pleased with the specimens. They are as large, and very much resemble the Black Morocco,—better colored, however, than we frequently find them. No doubt it will be one of the most popular late grapes we have.

The Maxatawney under glass, to our taste, is very disagreeable: the same experience as we have had with other native grapes.]

Pears—*From Ellwanger & Barry, Rochester.*—If the "proof of the pudding is in the eating," assuredly the best recommendation possible of Messrs. E. & B.'s system of Dwarf Pear management is in the splendid fruit they produce.

Here we have thirty varieties, in splendid condition, amongst which Sheldon, Beurré Superfin, B. Clairgeau, Doyenné Boussock, Louise Bonne de Jersey, Doyenné Robin, and Buffum, were particularly delicious.

Edmonds, which was on the list sent by our friends, and which we were particularly anxious to see, was not in the collection sent.

Grapes—*From Mr. Charles Arnold, Paris, C. W.*—Said to be a seedling: but no particulars. It is a very large, showy bunch,—as large and beautiful as a large Black Hamburg bunch; but the flavor is not equal to numerous others ripening at the same season. Possibly, like many other northern varieties, it might prove first class further south; its size and beauty at any rate renders it well worth good trial.

Bulblets of Gladiolus—*B. P. P., Baltimore, Md.*—"Will you be kind enough to inform me what is the best way to treat the bulblets or offshoots of the Hybrid Gladiolus: I have some fine ones and fear losing them?"

[If you have a hot-bed sash, or greenhouse, pot the bulblets, and keep them growing all winter. In the spring dibble them out into good rich soil, and many will flower the same season. If you have no convenience to keep them growing through winter, keep them dry and from frost, and in spring put them into rich garden ground. They will mostly flower the second season. There are also some very useful hints in a paper by Mr. Rand, at page 292 of our last year's volume.]

Propagating Spruces—*J. M. M., Jacksonville, N. Y.*—"I have a variegated White Spruce,—how best to propagate it?"

[Take cuttings of the *past season's* shoots now, and insert in pots or boxes of sandy soil. Keep cool till March, when they may be put in slight bottom heat, and the cuttings will be well rooted by May. Any Spruce strikes this way.]

Grapes from New Jersey.—Our correspondent, J. S. L., sends us some delicious Catawbas, of remarkably fine size, with the following note:

"Townsend Vineyard of two acres is on very coarse white sand, which would not produce five bushels of corn per acre. On some of the vines on stakes, as all are, we counted fifty fine bunches of Catawbas, and the leaves, both of Isabellas and Catawbas had suffered very little from mildew, and the fruit was uninjured by "rot." This vineyard is within a half mile of the Salt Bay, where there is room for many more of the same sort.

Fruit-growing near Jacksonville, New York.—A correspondent says:

"Our Grapes are extremely fine this year. Our lake shore, and for two miles back, is destined to become the geat vineyard country. I planted out about 11,000 this spring. One of my neighbors says he will plant 30,000 next spring. Our large-hearted Senator Cornell, who gave to our State a half a million of dollars to found a Cornell University, has begun planting a fruit farm of 3 or 400 hundred acres on the shore of our lake. He intands to plant every variety of grape and fruit that has any reputation, to test its adaptation to our country and climate."

Hyacinth Bulbs after Flowering—*M. A. F., Burlington Co., N. J.*—"Having heard that Hyacinth bulbs are useless after being flowered in the house, and being anxious to know if such is the fact, you would oblige me by informing me in the next number of the *Monthly*."

[Flowering in the house weakens the bulbs considerably, because pure air, and the nice peculiar soil about which the Hyacinth is fastidious, are rarely ever furnished to them. But the bulbs are by no means useless. If the flower-stems are cut away immediately after flowering, and care taken not to let the leaves die away prematurely, they will ripen sufficiently well to make tolerably good flowering plants for the open garden the following spring. It is not likely, however, that under any circumstances one would be here able to grow them again equal to what they once were, as that is an art which even in the favorable soil and climate of Holland has been brought to perfection only after many years of experience, and under the stimulus of great gain.]

Propagating Tree Pæonies—*J. M. M., Jacksonville, N. Y.*—These are raised by root-grafting on pieces of the herbaceous kinds, which have tuberous roots: half-ripened eyes of the Tree Pæonia are employed, and after root-grafting, the sets are started at once in bottom heat. They can also be often raised by division,—the plants being kept earthed up to induce rooting of the side branches.

Express Companies.—The notice we gave of the doings of Express Companies in the manner of 'charging,' will save us at least from $25 to $50 per annum. Mr. Williams sent us a receipt in reference to his Kittatinny Blackberry, by which we found that we had not only to pay over again, but to pay nearly double the original charge. The money was refunded to us by the company, with an apology, but with the remark that it was "impossible to prevent these errors of carelessness, but they were always ready to make restitution when errors were discovered." We can tell our friends how to prevent these things. When they send any thing prepaid, mark, *themselves*, on the parcel, "paid through to —— (wherever the box may be directed), and see that it is also so marked on the receipt they take.

P. B. Sheldon's Patent Composition, *for Destroying Borers and other Insects that infest Fruit and Ornamental Trees*, is said by prominent New York nurserymen to effectually exterminate the Borer, and relieve the tree of all rough bark and moss, leaving a smooth, healthy, green surface, and in every way promoting a vigorous and healthy growth to the tree.

Magnolia acuminata Seeds—*J. M. M., Jacksonville, N. Y.*—After getting the seeds from the cone, wash the pulp from them, and sow at once. If they are carefully dried in the shade, they will keep till spring; but if sown late in spring, they will stay till the next spring in the soil, often before they germinate. Vegetation is destroyed if dried in the sun. Sow them about ½-inch deep, and in any rich nursery soil.

OBITUARY.

MR. JOSEPH FROST.

Of the firm of Frost & Co., Rochester, New York, died suddenly in Rochester, of apoplexy, a few weeks ago.

MR. J. CUNNINGHAM,

Of Prairie City, Ill., a rising nurseryman of the West, was recently killed by a Railroad accident.

SIR W. JACKSON HOOKER.

[*Concluded from page* 310.]

It is a curious fact, that Sir William Hooker had, from the commencement of his botanical career, felt a strong interest in Kew, and had never abandoned the secret idea that the time might come when he might hold the post of its Director.

The placing of Kew on a national footing had been for some time a common object both with the Duke of Bedford and Sir William Hooker, and the former did not fail, before his death, in 1839, to urge upon those in political power, the fulfillment of his favorite project. Upon his death, his son, the late Duke of Bedford, zealously carried out his father's wishes; but it was upon the present Earl Russell, then Lord John, that the chief weight of the transaction fell; and it is to him, then First Lord of the Treasury, that the nation owes the possession of these magnificent gardens.

In 1841, Mr. Aiton, (the Director of all the Royal gardens, whether, fruit, kitchen, or botanical), resigned his post at Kew, having held it for 50 years. He was succeeded by Sir William, who received a salary of 300*l.* per annum, with 200*l.* to enable him to rent such a house as should accommodate his herbarium and library, by this time of immense extent, and essential, we need not say, to the working of the establishment, whether in a scientific or economic point of view. Sir William entered upon his duties in command of unusual resources for the development of the Gardens, such as had never been combined in any other person. Single in purpose, and straight-forward in action, enthusiastic in manner, and at the same time prepared to advance by degrees, he at once won the confidence of that branch of the Government under which he worked, which was then known as the Office of Woods and Forests, under the Presidency of Lord Duncannon. To those in office above him, he imparted much of the zeal and interest he himself felt, which was proved by constant visits to the Gardens, resulting in invariable approval of what he was doing, and promises of aid for the future. Another means at his disposal, and which he at once brought to bear on the work in hand, was his extensive foreign and colonial correspondence, including especially that with a large number of students whom he had imbued with a love of botany, and who were scattered over the most remote countries of the globe, and several of whom indeed remained in more or less active correspondence with the Gardens up to the day of his death. His views were further greatly facilitated by his friendly intercourse with the Foreign and Colonial Offices, the Admirality, and the East India Company; to all whom he had been the means of rendering services, by the recommendation of former pupils to posts in their employment, and bypublishing the botanical results of the expeditions they sent out. Nor can we omit to mention here the late Curator, Mr. John Smith, an officer of unusual botanical and horticultural knowledge, by whom he was zealously seconded in all his plans. Previous to this time, Mr. Smith had been a foreman in the Royal Gardens, in which position he had shown unwearied zeal and devotion to his duties; indeed, to him alone is due the credit of having upheld the scientific character of the Gardens for many years previously.

At the time of Sir William's taking office, the Gardens consisted of 11 acres, with a most imperfect and generally dilapidated series of 10 hothouses and conservatories. Most of these have since been gradually pulled down; and, with the exception of

the Great Orangery (now used as a museum for woods), and the large architectural house near the garden gates, and which had just previously been removed from Buckingham Palace, not one now remains. They have been replaced by 25 structures (in most cases of much larger dimensions), exclusive of the Palm stove, and the hitherto unfinished great Conservatory in the pleasure-grounds.

To describe the various improvements which have resulted in the present establishment, including, as it does, a botanic garden of 75 acres, and a pleasure-ground or arboretum of 270 acres, three museums, stored with many thousand specimens of vegetable products, and a magnificent library and herbarium, the finest in Europe, placed in the late King of Hanover's house on one side of Kew Green, and adjoining the Gardens,—would rather be to give a history of the Gardens than the life of their Director: we may, however, give the following dates of the most important events, so far as the public are interested.

The first step was the opening of the Gardens to the public on week days, which followed immediately upon Sir Williams entering upon the Directorship. Rather more than 9000 persons visited them during the first year of their being thrown open; a number which has gradually increased, until, in 1864, no fewer than 473,307 persons visited the Gardens.

About 1843 the Queen granted from the contiguous pleasure-ground an addition of 47 acres, including a piece of water, by the side of which the Palm stove was afterwards erected.

About 1846 the beautiful wrought-iron gates, designed by Decimus Burton, were erected.

In 1846 the Royal Kitchen and Forcing Gardens, which ran along the side of the Richmond road, and which included 15 acres, were added. Upon this piece of ground stood an old fruit-house, since memorable as the origin of the first Museum of Economic Botany that ever existed. On the said piece of ground being given over, Sir William requested that this building might not be pulled down, but that the windows might be enlarged, the walls fitted with shelves to hold specimens of vegetable products illustrative of the habits and uses of plants, and the whole thrown open to the public. The chief contributions were from Sir William's own collection and that of Mr. Smith; and these were soon increased by means of a vigorous correspondence, and are now represented by the three admirable Museums so well known to the public.

In 1861 was commenced the large Temperate House in the pleasure-grounds, often called the Winter Garden; the last building wanting to complete the establishment in a horticultural point of view. This beautiful building, as is well known, was designed by Decimus Burton, Esq., and is admirably adapted to its purpose; the interior arrangement of the beds, and of the plants in them, which have been so much admired, is, however, wholly due to Sir William's judgment and taste.

It might be supposed that the 24 years of Sir William's life spent at Kew in the above public improvements, added to the daily correspondence and superintendence of the Gardens, would have left but little time and energy for scientific pursuits; such, however, was far from being the case. By keeping up the active habits of his early life, he was enabled to get through a greater amount of scientific work than any other botanist of his age. The British Flora, which has now reached the 12th edition, he made over to his successor in the Glasgow chair, Dr. Arnott; but his monthly Journal of Botany was recommenced; first appearing as the London, and afterwards as the Kew Journal of Botany; which together embraced 17 annual volumes, and was enriched with papers of his own,—with letters from his correspondents in all parts of the world,—with reviews of botanical works,—with contributions on physiological, structural, and systematic botany,—and with notices of the progress of the science everywhere. With the exception of carrying on the "Botanical Magazine," for the last 15 years of his life, most of his leisure was devoted to the study of Ferns, and on this subject he published two works of standard value and great labor; firstly, the "Genera Filicum," with illustrations by the late Francis Bauer, Esq.; secondly, the "Species Filicum," commenced in 1846, and finished only last year. This work, which is in 5 vols., and contains the only complete systematic description of the vast tribe of plants to which it is devoted, would of itself have been sufficient to establish a botanical reputation, and is regarded as a standard authority upon the subject. During the last few years of his life, he also published his "Garden Ferns," "Exotic Ferns," and "British Ferns;" all beautifully illustrated, and with descriptions from his own pen. At the date of his death he was engaged upon a "Synopsis Filicum," of which one number only has appeared.

In connection with the scientific labors of Sir William Hooker, there are two names which should be prominently mentioned. The one is that of Lady Hooker, who for 40 years was his able amanuensis, and assistant in his literary duties and library; and the other is that of Walter Fitch, Esq.,

now the most distinguished botanical artist in Europe. Up to about 1835, Sir William made the drawings for his works with his own hands; but about that time he was fortunate in having the artistic skill of this gentleman brought before him, whose talents he encouraged, and whose services he eventually secured for the illustration of his works. Most faithfully has Mr. Fitch seconded his early patron and friend in his labors. Of their joint extent some idea may be formed from the fact that Mr. Fitch has executed in the last 30 years upwards of 4000 plates for Sir William alone.

Our concluding remarks must be few, and directed to Sir William Hooker's character, disposition, and appearance. An almost unbounded liberality was one of his most prominent features; and scientific botany is more indebted to him than to any individual since Sir Joseph Banks, for the progress it has made within the last half century. In his dealings with Government his conduct was as liberal as it was towards his fellow botanists. For the first 12 years of his residence at Kew, his herbarium and library were not only kept up at his own expense for the use and benefit of the public establishment, but was further open to every botanist who came to his house to make use of them. To him we are indebted for the appointment not only of botanists but naturalists to the majority of the Government expeditions of discovery, survey and research, which have been sent out during the last 30 years; and it is through his energy that funds were forthcoming from Government to meet the after expenses of the publication of their results. To young botanists he was especially kind and helpful; indeed there are few cultivators of this science in Europe or America, who have not paid lavish tribute to his generosity and encouragement. Last among his efforts has been the inducing of the Home and Colonial Governments to grant the necessary funds for the publication of the Floras of their possessions; and within the last two years of his life he prevailed upon Sir Charles Wood, the President of the India Board, in like manner to support the publication of the Flora of the British India; and through the influence of his steady friend, Earl Russell, he procured a grant for the publication of the Flora of tropical Africa.

A man personally so well known requires little description; but for such of our readers as have never seen him, we may state that Sir William was in person tall, athletic, and active; in features remarkably good-looking, and with a most benevolent countenance; and that his conversation had all the charm of a cultivated mind, joined to great facility in placing his subject clearly before his hearers; and there are none who have enjoyed the privilege of having been conducted round the Gardens and Museums by him who do not revert to it as a most enjoyable intellectual treat.

Although such subjects possessed little attraction for the late Director, yet it may interest those learned in genealogy to know that he was descended from the same family of which Richard Hooker, author of the "Ecclesiastical Polity," was a member, and we believe that his descendants are considered to be the only surviving representatives of the family. Though himself born at Norwich, his father had come there from Exeter, of which place he was a native.

He was an LL.D. of Glasgow, D.C.L. of Oxford, a Fellow of the Royal Societies of London and Edinburgh, the Linnean, Antiquarian, Geographical, and other Societies; a Knight of Hanover, Companion of the Legion of Honor, a Correspondent of the Academy of France, and a member of almost every other learned Academy in Europe and America.

He died at Kew on the 12th of August, in the 81st year of his age, after a very short illness, of a complaint in the throat, then epidemic at that place.

He leaves a widow, two married daughters, and one son, Dr. Joseph Hooker, the Assistant Director of the Royal Gardens, and who, since the death of his father, has been appointed Director of the Kew Gardens.

Books, Catalogues, &c.

France and England in North America; *Or, Pioneers of France in the New World.* By Francis Parkman. Boston: Little, Brown & Co.

Among the many authors destined to "leave their foot-prints on the sand of time," Mr. Parkman's name will by no means be an inconspicuous one. Suffering as he does from severe physical infirmity, especially unfavorable to writing and scholastic studies, it is wonderful how much he accomplishes, and how well he performs it.

Besides several other volumes, which have become standard works in American literature, he is well known as the author of articles in the *Atlantic* and other magazines, as well as in our journal.

This volume has reference principally to the influence of French ideas as flowing from the first attempts of France at colonizing the New World,—

that in reference to English influence being yet to follow.

We have derived much pleasure and profit from its perusal and study, as will, we are sure, the numerous friends of Mr. Parkman to be found among the readers of the *Gardener's Monthly*.

ADDRESS OF C. M. HOVEY, ESQ., PRESIDENT OF MASS. HORTICULTURAL SOCIETY, AT THE DEDICATION OF THE NEW HALL.

Mr. Hovey eloquently detailed the progress of Horticulture in Boston from its earliest infancy, tracing it step by step to the incorporation of the Mass. Horticultural Society, to its culmination in the present fine hall. This address has an interest beyond what is usual with such productions, being in fact a valuable contribution to the history of American Horticulture, and we hope it will be preserved in pamphlet form.

THE PRACTICAL ENTOMOLOGIST, which the Publication Committee of the *Entomological Society of Philadelphia* purpose to publish, and issue gratuitously, is an occasional Bulletin, in which papers on the Insects Injurious and Beneficial to Vegetation will be given for the benefit of the American Farming Interest. It is hoped that the information intended to be imparted through this medium will be of use to the Agriculturists of this country, —a class which comprises the wealth and strength of the population of the United States,—by leading them to study critically the Entomological fauna which surrounds them, and to derive from their knowledge thus acquired, the power to increase the production of their crops and develop the interest they represent.

The Cotton-plant in the United States is subject to lepidopterous pests; it is attacked by two species of Moths in their larval or caterpillar state, namely: *Anomis xylina*, Say, and *Heliothis umbrosus*, Grote. The ravages which these insects have committed by devouring the leaves and tender shoots, have amounted in certain years to the loss of a greater or less portion of the crop, and it is to be reasonably supposed that a knowledge on the part of the Planters of the history and development of these insects, would have suggested some period of their existence during which the greatest mass of individuals might be destroyed by the simplest means, and the least outlay of labor and money. The "measuring worms" that have of late become such pests in Eastern cities, by defoliating the trees and annoying the citizens, is another example of the effects which the obstruction of Nature by artificial means has produced. This species—*Ennomos subsignaria*—may be found solitary and rarely in the woods, not far from the scenes of its ravages, where birds and predacious insects exercise their mission of checking production unhindered by the hand of man. Interfere artificially in what way you will, on the harmony which is the divine law of Nature, and you will produce effects which result in the overthrow of the balance which keeps down excessive individual production. The Hop crop of 1865 is now much destroyed by indigenous insects throughout large portions of northern New York State, and farmers in that locality speak freely of their intention of abandoning their Hop Yards. Enough;—we could multiply instances, were these not sufficient, to demonstrate the practical utility of attentive study of the Economy of Insects and which have addressed themselves forcibly ere this to the Agriculturists.

The Society desire, by means of original Papers, to bring out the true history of each and all of our noxious insects; and its believed that, this attained, simple means will suggest themselves by which the evil may be subsided—in certain cases such easy remedies as burning the stubble and vigorous fall plowing.

To aid them in their purpose, they ask that from time to time, by letter or otherwise, such information as may result from daily observation, and phials containing specimens of the noxious insects of different vicinities, for determination and study, may be sent to the Secretary of the Institution, at *No.* 518 *South Thirteenth St., Philadelphia.*

The Society adds, in their Circular:

"We expect that the various scientists who have published Papers in the 'Proceedings' of this Society, and those of other Scientific Institutions, will kindly further our ends by submitting to us papers on this special subject. We shall endeavor to answer all Correspondents on the subject through the medium of the *Practical Entomologist;* while we urge that the active co-operation of all interested parties will alone insure success in an undertaking which is a labor of Public benefit, without monetary recompense, and which we are peculiarly able, from our knowledge and collected material, to advance successfully."

CATALOGUES.

In addition to those noticed last month we have received the following:

Robert Buist, Rosedale Nurseries, Philadelphia. Wholesale List. Particularly interesting, because of its containing so many things not usually offered at trade rates.

Mahlon Moon, Morrisville, Bucks Co., Pa. Trade List. Also somewhat of the character of the last. Mr. Moon says no insect will feed on the Magnolia acuminata, which, if so, must prove an additional 'card' for this already popular tree.

B. K. Bliss, Springfield, Mass. Autumn Catalogue of Dutch and Cape Bulbs. A magnificent descriptive pamphlet of 30 pages.

H. A. Dreer, Philadelphia. Descriptive List of Bulbs, of 16 pages, with colored plate.

C. W. Grant, Iona, N. Y. Price List of Grape Vines.

J. M. Mattison, Jacksonville, N. Y. Wholesale List.

J. M. Jordan, St. Louis, Mo. Trade List.

Hovey & Co., Boston, Mass. Autumn Catalogue of Bulbs.

New and Rare Plants.

LILIUM FULGENS (*Brilliant Lily*).—Lilium fulgens was brought, in company with several other interesting species, from Japan to Europe, and placed in the botanical garden at Ghent, by M. Von Siebold, in 1830, and it was there we saw it for the first time in flower, in 1833. The stalk rises to the height of fifteen, eighteen, or twenty-one inches—that is, when growing from bulbs of middling size. It is stiff, erect, pentangular-winged, smooth, blackish up to the third part of its height, and marked with greenish stripes, garnished with leaves throughout its length, the upper part of a very pale green. The leaves—at first scattered, then growing three, four, even five together towards the summit in vigorous plants—are in general elliptical, lanceolate, inequilateral, very smooth, and very entire to the borders, five-nerved, and rather thick. The flowers are very large and beautiful, campanulated, awl-shaped, colors red mingled with orange and light brown. They are disposed in bunches of three, four, six, or even eight (or more), when the Lily is strong; vertically when their number is is four; perpendicularly if beyond. The number bracts corresponds with that of the flowers, each peduncle being furnished with a bract varying in size. M. Verschaffelt obtained this charming Lily recently from the horticultural establishment of Jacob Makoy, of Liege. This species thrives in the open air, and requires the same treatment as that bestowed on other Lilies of the same category.—*Gardener's Weekly.*

THE *Botanical Magazine* figures the following:

BERTOLONIA GUTTATA (*Spotted-leaved Bertolonia*).—Received by Mr. Veitch, of Chelsea, in May last, as a native of Madagascar, but believed to be peculiar to Brazil. The foliage is most beautiful, being marked between the five parallel veins with lines of distinct white or, more frequently, rose-colored spots, giving the leaf the appearance of being studded with rubies. Flowers rose-colored.

MANETTIA MICANS (*Showy Manettia*).—Messrs. Veitch & Son, King's Road, Chelsea, have it from their collector in South America, Mr. Pearce, who found it at Muna, at an elevation of 3000 to 4000 feet. Stove climber; flowers orange red.

ARISÆMA PAPILLOSUM (*Papillose Arisæma*).—Native of the Nilgherry Mountains, and of central Ceylon, at an elevation of 4000 to 6000 feet. The large tuberous roots are used as a medicine by the Cingalese, and sometimes called Snake-root.

SCUTELLARIA AURATA *var.* SULPHUREA (*Sulphur-flowered Golden Scutellaria*).—A variety of Scutellaria aurata with smaller flowers of a pale sulphur color.

PSAMMISIA LONGICOLLA (*Long-necked Psamisia*).—Native of South America. A straggling shrub, with glossy, coriaceous leaves, and bottle-shaped scarlet and green flowers.

PHALÆNOPSIS SUMATRANA (*Sumatra Phalænopsis*).—Native of Palembang, Sumatra, where it was discovered by Korthals more than a quarter of a century ago, but first exhibited in flower in this country by Mr. Day, at South Kensington, in the present year. Flowers yellowish white, barred transversely with broad streaks of reddish brown; the lip white, sppotted with orange and streaked with violet or lilac.

VANDA LOWII.—During a recent visit to the collection of Count Gomer, at Amiens, we saw the above plant in full flower, which, according to the English account, was first discovered by Mr. Hugh Low, jr., growing upon large trees in low damp ground in Borneo. Described and imported by him in 1847, it has never yet, notwithstanding its essentially ornamental character, been brought into notice—the plants introduced by Mr. Low not having, it is supposed by Dr. Lindley, long survived in Europe. It has now been re-introduced, as is proved by the magnificent specimen above mentioned, but nothing more is known on the subject. The plant in question, when we saw it but a short time ago, was little more than 2 inches high, with four flower racemes. One of the latter is now before us,

and has attained the astonishing length of 2 yards 12 inches, It bears thirty-seven flowers, all in full bloom, except the two or three top ones. Imagine the admirable effect produced by this Vanda, with its h red and fifty flowers at the very least, all out at the same instant, each flower being yellow spotted with bright yet deep red. It is to be remarked that the two basilar flowers are in this specimen smaller and somewhat different in color (yellow) to the rest. Is this common to all of the species? We do not know, but mention it as a fact in connection with a most interesting family of plants. The culture of Vanda Lowii is the same as that recommended for Dendrobiums and other East Indian orchids.—*Floricultural Cabinet.*

CAMELLIA ISABELLA ORSINI.—An elegance, a perfection, a color clear as delicate, incontestable floral qualities, even as compared with the most distinguished of its tribe, point out this beautiful Camellia to the notice of our readers. It was produced by M. Cæsar Franchetti, of Florence, and by him sent to M. Verschaffelt, who kept it back for two or three years, until he had tested its merits, and above all the certainty of its bearing abundant as well as beautiful flowers.—*Gard. Weekly.*

SKIMMIA OBLATA.—Imagine the bright-colored berries of the Holly set amongst the glossy lively green leaves of the Laurel, and something like a picture of this new Skimmia will be brought before the mind's eye. In September, 1864, Mr. Standish exhibited before the Floral Committee of the Royal Horticultural Society a specimen, in fruit, of this new hardy evergren shrub, when it received, as it deserved, a first-class certificate. As a decorative shrub it is immeasurably superior to the ordinary Skimmia japonica, as it is called, beautiful and interesting as that may be, in certian situations for it produces berries of the brightest vermilion red, in contrast with rich green foliage, while that has both foliage and fruit dull-colored. The plant, which was one of Mr. Fortune's discoveries, must become a valuable acquisition for our gardens and shrubberies.

On examination it has proved to be obviously distinct from all Skimmias yet known, in the remarkably oblate figure of its bright red berries, so very different from the oblong fruits of the Skimmias we have heretofore possessed. It is also remarkably distinct in the form and texture of its foliage, as well as in habit. It is a free-growing plant, with dense clear green leaves, and erect terminal panicles of white flowers, succeeded by bright-colored berries nestling among the foliage. We are assured by Mr. Standish that, unlike the other species we cultivate, this bears exposure to the sun without injury.—*Florist and Pomologist.*

Domestic Intelligence.

BLACK KNOT.—We have numerous inquirers respecting this, and have had the experience of only one person in treating it. Mr. A. D. Brown, of Mercer Co., N. J., states that he *knows* the following remedy to be effectual:—A table-spoonful of Chloride of Lime (Bleaching Powder) is mixed with a quart of water, and after it has stood, occasionally shaking, for a few hours, it is ready for use. The knot is pared even with the healthy bark, and the solution applied to the wound. Mr. B. says: "I will guarantee that the Black-knot will not appear in that place again." A simple remedy and easily tried.—*Am. Agriculturist.*

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA.—For over fifty years Philadelphia has had in its midst an institution which has fostered a love of sciences, and furnished the materials for their study, without a dollar of cost to the State or County. Quietly pursuing its way, the Academy of Natural Sciences of Philadelphia has, from its origin down to the present day, been dependent upon the liberality of individual members for the means of support. The hundreds who visit the large and valuable collection in the building at Broad and Sansom Streets, on Tuesdays and Fridays, have no conception of the struggles of the few gentlemen who commenced and added to the specimens now arranged for public exhibition. It is owing, perhaps, to the fact that the Society has never come prominently before the public, that it has not been the recipient of legacies sufficient in amount to make the Academy a self-sustaining institution.

A sketch of the origin and progress of the Academy will not only prove interesting to the people of Philadelphia, but it will also serve to show how much has been done by a few energetic citizens, actuated by a desire to improve themselves, and furnish the means of improvement to others. As late as 1812 the natural sciences attracted very little attention from the public, and the few persons who cultivated them contended with many difficulties. There were then no public collections in any of the branches of natural science, while the publications

were rare and imperfect. Among those who felt the need of association for mutual improvement in study was Mr. John Speakman, an apothecary, located, prior to 1812, at the corner of Second and Market Streets. He was an enthusiastic student of nature, depending but little upon books for information in the branches which claimed his attention. He gleaned knowledge from the remarks of the intelligent who frequented his shop, and soon his warerooms became the centre of the literary and scientific gossip of the day. Mr. Jacob Gilliams was an associate of Mr. Speakman. The two became acquainted with Mr. Thomas Say, another student, and this acquaintance led to an introduction to Mr. Alexander Wilson, the ornithologist. These gentlemen met together frequently. At one of the meetings the plan of coming together at stated times, to communicate to each other what they might learn about the phenomena of nature was suggested.

On the evening of the 25th of January, 1812, in accordance with the suggestion, Dr. Gerard Troost, Dr. Camillus Macmahon Mann, Messrs. Jacob Gilliams, John Shinn, jr., Nicholas S. Parmentier, and John Speakman met at the house of the last-named gentleman, and there started a Society for the exclusive object of cultivating the Natural Sciences. Several meetings for the purpose of organization were held, until in March it was decided to discontinue the gatherings at Mr. Speakman's, and engage a more public room. A room on Market Street, near Franklin Place, was selected, and here on the 17th of March, a constitution was framed, and on the 21st of the same month, the title, "The Academy of Natural Sciences," was used. The members agreed "to contribute to the formation of a museum of natural history, a library of works of science, a chemical experimental laboratory, an experimental philosophical apparatus, and every other desirable appendage or convenience for the illustration and advancement of natural knowledge, and for the common benefit of all the individuals who may be admitted members of our institution." Thus was started the Academy.

Six gentlemen originated the enterprise. The smallness of the Society, and the apparent lack of interest on the part of the public, was calculated to dispirit these gentlemen, but they persevered in the face of all discouragement. They rented a room in April, on the second floor of a house on the east side of Second Street, near Race, and here the nucleus of the present museum and library appeared. Mr. Speakman and Dr. Mann presented books; Mr. Parmentier presented an herbarium collected in the environs of Paris; Dr. Barnes presented a few shells and insects; Mr. Say a few mounted birds, and Dr. Troost some artificial crystal. This display of objects of science was rather insignificant, but from it sprang the present magnificent collection.

The organization of the Society included a Board of Management, and it is related of the early meetings, that on the 18th of April, 1812, Dr. John Barnes was the first member elected. He appeared at the meeting. The Board of Management, which included all the founders, retired to an adjoining apartment to transact business, leaving Dr. Barnes alone to constitute the meeting of the Academy! But this paucity of members did not long continue. On the 7th of May Dr. Gerard Troost was elected President, and the Society may be said to have commenced its career in earnest. Soon the collections began to increase. Mr. Speakman purchased a collection of minerals and presented it to the Society, and Dr. Troost made use of these in a course of lectures on Mineralogy, delivered before the Academy. By September it was found necessary to secure more commodious quarters.

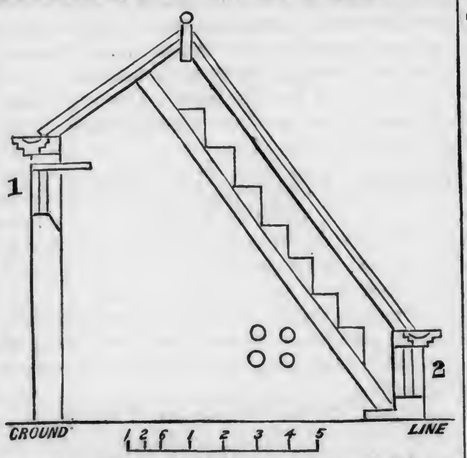
A room in the upper part of a three-storied house on the west side of Second Street, near Arch, was rented. At the close of the year 1812, the Academy consisted of 14 members elected, and 33 correspondents. Under the auspices of the Society, a course of popular lectures on Botany was delivered by Drs. Waterhouse and Barnes. They were the first of the kind ever delivered in the city, and of course attracted attention to the Academy. It assisted to build up the Society, notwithstanding the country was disturbed by the war with Great Britain, and in 1815 new accommodations were needed. These were found in Gilliam Court, Arch Street, between Front and Second. From this time the progress of the Society was steady and gratifying to the most sanguine of the founders. Dr. Gerard Troost continued President until 1817, when he resigned, and was succeeded by Mr. Maclure, one of the best and most liberal of the early founders of the Academy. Mr. Maclure remained in the presidential chair until his death, in 1840. Mr. Maclure made a geological survey of the United States, and the account published in the transactions of the American Philosophical Society, proves him to have been the pioneer of American Geology. His contributions in money to the Academy were constant and liberal. It is estimated that he gave at least $25,000. To his munificence and labors during the early period of the Society's history, the Academy is greatly indebted for its present exis-

tence. William Hembel, Esq., was elected President in 1840. In 1849 he declined re-election. Dr. Samuel George Morton was the fourth President. He continued in office until May, 1861, when he died.

[*To be continued.*]

Foreign Intelligence.

STRAWBERRY-HOUSE AT ENVILLE PARK.—This is a Strawberry-house 45½ feet in length, between



9 and 10 feet in width, inside measure, height to apex 10 feet, height in front 3 feet. 1 and 2 are wooden ventilators at back and front, hung by pivots in the centre. The diagonal pieces of wood supporting the shelves are as far apart as such supports for stages generally are, so that there is ample room for getting at these seven shelves easily from the inside of the house. It will be observed that all these shelves are at an equal distance from the glass, and that the slope of the glass is such as to give the greatest amount of the direct rays of the sun to the plants beneath it during the early months of the year, when forced Strawberries are most in demand.

We could well believe the statement of the wonderful crops obtained in this house, and from such plants in pots as we noticed ripening their crowns. We have seen no other house so suitable for the object, and can well imagine it would be free from the annoyances and insects that are apt to seize on the Strawberry when the plants are crowded into any and every open space in any house where there is heat. All who have the ambition to keep every thing and every structure to its right use, will thank us for this section of the Strawberry-house at Enville Park.—*Journal of Horticulture.*

PENN'A. HORTICULTURAL SOCIETY.

The Annual Exhibition of this Society was a success, both pecuniarily and in its general results. As the Reports of the Committees have not been endorsed by the Society in time for the present number, we will give a detailed account next month.

DISCUSSIONAL MEETING, SEPT. 5TH, 1865.

The President, D. Rodney King, in the chair.

THE PROPAGATION AND CULTURE OF THE NATIVE GRAPE.

(*For Essay see page* 326.)

After the reading of the Essay a general discussion ensued, the members giving their individual experience and observations.

Mr. Merceron, in answer to several questions, stated, that by his method of propagating, in the open ground, he does not lose more than 2 per ct. of the cuttings, except of the Diana, of which 20 per cent. were lost; of Iona and Taylor none failed. He cuts the wood in November, close above the eye, and keeps the scions in old tan-bark till spring. Sometimes finds them a little frosted, but not to their injury, and occasionally even the buds have started to grow. Does not plant out till the frost is all out of the vines. The upper eye is inserted about ¼-inch below the surface. Cuttings are planted in rows 2 feet apart, and 6 inches asunder in the row: tramping them well, on either side, at planting, is very essential. Uses a hand cultivator only, home-made, with five teeth, made of thin saw blade. Never mulches or shades the cuttings. The exceeding fineness and porosity of his soil is the great secret of his success.

The Creveling is a grape of fine quality; with him it never rots nor sets an imperfect berry. For two years past it has been more productive than the Concord; the latter losing some of its crop by the rot. It is also a good wine grape. Hereafter he intends growing the two together, planted alternately, the Concord trained above the Creveling, horizontally, so as to insure the full impregnation of the latter, which is not, under all circumstances, full bunched.

Approves of the stake system for the vineyard, as much less expensive than the trellis, but the stakes must be substantial and well and firmly set.

Prunes in November, after the fall of the leaf.

Norton's Virginia is excellent for wine, and very productive, healthy and hardy.

The Franklin is an excellent wine grape, as good, prolific and hardy as the Clinton, and, with him, has never mildewed or leaf burned. Saw wine, made of it, at Mr. Huidekoper's, at Meadville, Pa., as good as a fair Burgundy.

Is decidedly opposed to all summer pruning.

The French system of one-eyed cuttings, covered with 2 inches of earth, he had tried and found an entire failure.

Mr. Hayes gave his experience in the out-door propagation of the Grape. He once planted in the autumn, a large lot of cuttings, and in the spring following also a quantity, which had been *cut in the spring*. Fully 50 per cent. more grew of the former than of the latter. He does not doubt, however, that fall cuttings planted in spring would do equally as well. Uses three-eyed cuttings, one left above ground, and the surface well mulched. In this way roots strike from both eyes. Thinks summer pruning necessary. This year he did not summer prune and has no ripe grapes. It is easy to raise a crop of grapes on young vines; the difficulties of vine growing begin about the fifth year.

Mr. Meehan stated that his experience confirmed the practice of cutting grape scions in the fall. Last year he cut some Delaware scions in the fall, and again in the spring. Of the former nearly all grew, of the latter only two cuttings survived. He thought Mr. Merceron's soil peculiarly suited to out-door propagation; but in other localities the character of the soil will not allow it, and parties are compelled to resort to in-door propagation. Believes that those grown under glass are quite as good as as the open air vines. He considers that vines with one set of roots (raised from eyes) are superior to those having two sets (raised from cuttings.).

Mr. Kilvington finds that the scions callus very readily in tan bark. He does not practice summer pruning nor advise it.

The Chairman remarked that all his vines in the garden summer pruned, and managed *secundum artem*, failed to produce a crop; but one old vine, which clambers up a Cedar-tree, near the stables, gives excellent crops every year.

Mr. Harrison spoke against summer pruning. He does not touch the vine, except to remove the outer bunches, leaving two only to each lateral. In reply to Mr. Hayes, he stated that, with him, the vines improved in health and productiveness with their years. From three single canes of the Delaware, 8 years old, and only 6 feet high, he obtained 21 pounds of perfectly ripened grapes, the space covered being only 6 feet by 9, or 54 square feet.

Rebecca vines also, 10 years old, had borne excellent crops.

Having lately visited Mr. Merceron's place, and examined it thoroughly, he gave a short description of his soil, culture, propagation of plants, and products. The top soil he found to be 16 inches in depth, of fine rich brown moulder's sand, or loam of identical appearance, underlaid by several feet of a similar soil, but of a bright yellow color; not a pebble was to be seen, and the ground, which never baked in the sun, or washed with the rain, can be worked within an hour after the heaviest shower. He also measured the Strawberry beds, which covered 44–100 of an acre, and yielded 3630 quarts of berries, selling for $608; or 8250 quarts per acre, worth $1382. Fruits, plants, flowers, vegetables, all flourished in this genial soil.

On motion of Mr. Thomas P. James, the thanks of the Society were voted to Mr. Merceron for his able and interesting essay.

INDIANA POMOLOGICAL SOCIETY AND STATE FAIR.

We had no idea of getting so far West this season, but an invitation, conveyed in the kindest a manner, by Mr. I. D. G. Nelson, on behalf of the Indiana Pomological Society, and the State Agricultural Society, to come out to Fort Wayne, and see "what they were doing," left us no choice but to accept.

The two Societies held their exhibitions together, and afforded a fair view of the present condition of the Agriculture and Horticulture of the State.

One of the most pleasant features of this meeting was to find it so well supported by the presence of the leading horticulturists and agriculturists of the State, most of whom we had the pleasure of meeting there. The success of these Fairs are too often measured by the number of people who come to the 'races,' or the 'penny shows,'—or by the amount of money received over and above expenses,—but the real practical interests of the State are best served by the interchange of ideas between observing men who meet on the ground, and communicate to each other what they know, and go home charged with new ideas, which tend, in a thousand ways "unseen on the surface," to add to the material interests of a Commonwealth. Whichever Committee had the matter in charge of bringing together so many good men, should receive the special thanks of the people of Indiana for their signal success, as they heartily have ours.

The Agricultural Department of the Fair was characteristic of the West,—rather short of good Stock, but very superior in labor-saving Implements, and furnished with good Vegetables. Among the fruits, Pears were rather inferior in quantity; but

the few that were exhibited showed that it was rather that Indiana had not turned its attention to Pear culture, than that they could not be grown. Some White Doyennés were remarkable,—as fine as we ever saw in the East in the palmiest days of this now failing variety. Mr. Marshall, of Fort Wayne, had a few very fine samples, and will, no doubt, do better another time. To Mr. Heaver, of Cincinnati, one of the chief awards for Pears was made.

The great Pomological strength of the West lies in its Apples. Shorn of these, it would be as weak as Sampson after going through the hands of Delilah. The specimens were fine, the collections extensive, and the competitors numerous. Indiana can brag on its Apples,—when any other State intends to bring together a better lot, "may we be there to see."

Grape culture does not seem, so far. to be highly advanced in the State. There were a few Isabellas, Catawbas, Logans, and Delawares, from several growers, but not superior specimens. In this respect the credit of the exhibition was sustained by Pennsylvania, for some of the finest Isabellas and Catawbas we ever saw were there from Erie, exhibited by Mr. Griffith. The Concords of Mr. Knox, of Pittsburgh, were also very much admired —the color, especially, notwithstanding it was archly suggested by a lady spectator, that "every thing is black that comes from Pittsburgh."

Much interest was felt by those excited on the Wine question, by two doughty antagonists,—Mottier, of Cincinnati, and the California Wine Company, ably represented on the ground by Mr. Orville Tinkham. Mottier gained the award, as, apart from the fact that the California Wine is not the produce of the native American Grape, which is the idea in the "American Wine question," the Committee decided there were 16 per cent. of alcohol in the California Wine, against seven of Mottier's, which they considered in the latter's favor. In view of the exhilirating effects of these Wine Exhibitions on fruit-growers, our friend, J. J. Thomas, suggests that he may some day start a "National Pomological Total Abstinence Society."

The discussions of the Pomological Society were held each evening at the Court House, in the room, we were informed by the opening address of Pres't. Nelson, where the State society was first conceived. He called on Dr. Warder to address the meeting, who held forth in his usual happy way,—tracing the history of the Indiana Society with that of his own State Society of Ohio, the foster parent of the Indiana,—praising the Indiana for the great results she had accomplished in so short a time, and pointing out encouraging prospects, inducive of further efforts. Kentucky, he said, was about to follow, and a meeting had already been organized at Elizabethtown. He then referred particularly to Grape growing. He opposed so much mystery, said propagation and culture was simple, and it was our duty to teach the people so. He held strong vigor and healthy growth the first elements in a good Grape; a nice shade of superior flavor in a poorer grower notwithstanding. The Committee on the Greeley premiums, he said, had met a few days before, and though not disputing the superior flavor of the Iona, would not give it the premium, because not satisfied that it was generally as hardy, vigorous, and free from disease as others which, though very good, might not be quite its equal in flavor alone. They would have given the premium to the Concord, which, though it was perfect in all but one point, that one point kept it from the standard of excellence called for by the terms of Mr. Greeley's offer. He concluded by proposing as the sense of the meeting, that no Grape should be considered worthy of cultivation that had not for its first quality, the character of *general* hardiness, and freedom from disease, which produced considerable discussion, as incidentally, how vines were raised came into question.

Dr. Warder and Dr. Knox, opposed house raised vines, the first stating his belief that vines that are raised for the first year or more in pots are not good; and the latter modified this by saying if the kind would do well out of doors, a pot raised plant might also do well; but in kinds that did not grow well out of doors, a pot raised plant, though looking well, would do no good.

Mr. Heaver could not see why pot plants should not be as good as others. He questioned whether the whole of the vines forming Mr. Knox's famous vineyard were not originally pot plants; and he supposed now all Mr. K.'s vines were struck from eyes under glass, and raised that way for the first few weeks at least; and if it were good for the first few weeks or months, he did not know why it might not be good a little longer.

There were some further interesting remarks made on Grapes and Apples, which we will again refer to next month.

On the evening of opening, Mr. Nelson entertained his stranger friends—to the number of fifty, perhaps,—at his beautiful country-seat and nursery, at Elm Park, a special train of cars being placed at his disposal by the Toledo and Wabash R. R., to take them there and back. The Fort Wayne R.R. Co. acted in the most liberal manner to those interested in the exhibition, and the Hotel accommodations were in the most princely style,—those of the Rockhill House particularly, which is one of the finest buildings we have seen outside of a very few in the large Atlantic cities; and altogether we were so impressed with the hearty hospitality and liberal business views of the people of Fort Wayne, that we are at no loss to understand how it has now a population of 20,000, having at least doubled it in ten years, and is now without doubt only inferior to Indianapolis in size and consequence to any town in the State of Indiana.

ST. LOUIS HORTICULTURAL SOCIETY.

We make the following extracts from these interesting 'Proceedings:'

DWARF PEARS.

"Dr. Hull was called upon to state his view in regard to Pear culture.

He said: Our Horticultural Society has pretty much settled down upon the conviction that the cultivation of dwarfs ought to be discarded. At one of our meetings a challenge was thrown out to show a single orchard where three successive crops had been produced on dwarfs. Some members said they could do it; and several said they could show five crops. A committee was appointed to examine and report upon the facts. The committee found that in all instances where trees had been productive for five years, pear roots had been formed, which had taken the place of the quince. They also found that pear blight had been from twenty-five to seventy-five per cent. greater in dwarf than in standard trees in an orchard of 4,500 trees. In his own orchard of standards blight could scarcely be found.

Mr. Malinkrodt finds the blight about the same in standards as in dwarfs, and finds it increased by too severe pruning. One thing is certain, if a Pear tree dies, it is said to have died of blight, whether it is so or not.

President Colman says he hears much about blight, but has found none on his grounds, and can show his orchard of about 400 trees, as healthy as can be desired. He prunes but little, and thinks blight has an intimate connection with pruning; at least has seen more of it in closely pruned orchards than in others but little pruned.

Mr. Malinkrodt corroborated his views by citing the condition of one of his neighbor's orchard.

Mr. John T. Coleman thought that Mr. Malinkrodt was right. Has had a Pear orchard mostly in dwarfs for six years in bearing without blight. Believes with the President, that pruning has much to do with the blight, at least so his experience goes to show.

Dr. Claggett has had the Louise Bonne for nine years in bearing, and very productive at that. Three years ago, however, it would have died but for the treatment he gave it by shaving off the bark as detailed in the proceedings of the State Horticultural Society. His experience would not justify a condemnation of dwarfs. As, however, by proper treatment, standards can be brought nearly, if not quite, as soon into bearing as dwarfs, he would recommend where persons had ground enough the planting of standards, as they will soon exceed in quantity the amount of fruit produced by dwarfs. Thinks also that a mistake has been made by calling every disease that afflicts the Pear tree blight. Has had trees to die from various causes, the root of some dying, while the tree otherwise was in a healthy condition.

Mr. Malinkrodt has lately been to Europe. There the disease of Pear-blight is unknown, and Pear trees attain the age of three or four hundred years, and in size will rival the oaks of our forests. The disease no doubt is climatic, and induced by overstimulating the roots, and producing the luxuriant growth. At least that is his inference, because he has seen in America Pear trees comparatively neglected which attained the size of two feet in diameter.

Dr. Claggett. There are, within less than one mile from here, Pear trees twenty-five to thirty inches in diameter, each of which produces annually a wagon load of fruit.

GRAPES AND WINE.

Mr. Tice, from the Committee appointed at last meeting to examine the nursery of Mr. Jordan, presented a report of said examination.

Your Committee found the vineyard, consisting of 500 Concord vines and about the same number of other varieties, such as Delawares, Norton Virginia, Hartford Prolific, and several others, all of which are used for propagation by layering. The Concords, however, were bearing, on some vines as many as six to eight pounds. The layers were very fine and thrifty. There was also a large area of ground set in cuttings last spring, doing finely, some showing two to three feet growth. The proprietor told us he expects to raise one hundred thousand plants this season. Saw some Delawares and Concords bearing, grown last season. There are also in the nursery about 15,000 Pear trees, from one to four years old, some in fruit; about 8,000 Currant bushes; a large collection of Roses,

and the famous Japan Lily, in bloom; with a large collection of Evergreens. The ground is well drained, and the cultivation is entirely clean, so as to provide healthy and vigorous growth in the plants.

A first-class plant should have from three to four feet of well grown and well ripened wood, and should be propagated from bearing wood. Plants raised from green wood or forced by stem, always turn out sickly for a year or two after planting, discouraging the planter, and should be voted an imposition.

Mr. Cozzens—At the request of Mr. Gerner I will give his method of packing grapes for shipping. The lid is fastened on, and the box reversed with bottom upward. Then two pieces of paper are laid one from the right, the other from the left side of the box, to overlap each other under the lid. The grapes are then put on the tops of the bunches resting on these papers, till the box is about three-fourths of an inch more than full; the bottom is then laid on, another box packed and placed on the top of this, and so on, until the pile is four to five feet high. The pile is then changed, the top boxes in the bottom of the pile, until the whole is reversed. The bottom is then nailed on, and when the box is opened berries alone are seen, and no stems.

A bottle of Catawba wine, presented by Francis Thias, St. Clair County, Ill., was then tested, and found a very good article.

On motion of J. T. Coleman, the subject of Wine making was elected for discussion.

Mr. Soulard being called on, said his experience was limited, but such as it was he would give it. First, has the cask clean and sweet, then mashes the grapes and presses them in a common cider press; then puts a few gallons of the must or juice in the barrel: suspends in the barrel some burning brimstone, shakes the barrel while it is burning, and then fills up with must; as it ferments keeps the cask full; when the first fermentation has gone through and the liquid is clear, racks it off and puts it in a cool place.

Mr. Malinkrodt. Has not a great deal of experience, but is convinced to make good wine we must have the proper appliances. In Europe, a wine cellar is deemed indispensable. These cellars are sixty feet deep. In these the wine is placed after the first fermentation is over. These cellars are of a low temperature, and vary but a few degrees throughout the whole year. The temperature checks fermentation. The first is the vinous fermentation; this soon passes into the vinegar fermentation if kept in a warm place. Hence these deep and cool cellars.

Dr. Hull. What little experience I have conforms with the theory advanced by Mr. Malinkrodt. Lets the first fermentation pass off in a warm place, then puts it in a cool cellar. In this way has succeeded in making good wine.

Mr. Jordan had tasted wine made by a friend, fermenting it under a syphon. The result was that the alcohol was prevented from escaping, and even much of the sugar was not converted into alcohol. Coming in contact with the air induces to ascetic fermentation.

Mr. J. T. Coleman has fermented must under the syphon, which was hermetically secured to the bung-hole, and the other end placed in a basin of water. Left it in this condition until the violent fermentation was over, then racked it off in another cask, and fixed the syphon as before.

Mr. N. J. Colman. It is impossible to prevent the air coming in contact with the wine. What is the syphon filled with?

Dr. Edwards. With the gases escaping from the wine.

Mr. Colman. Is it lighter or heavier than the air?

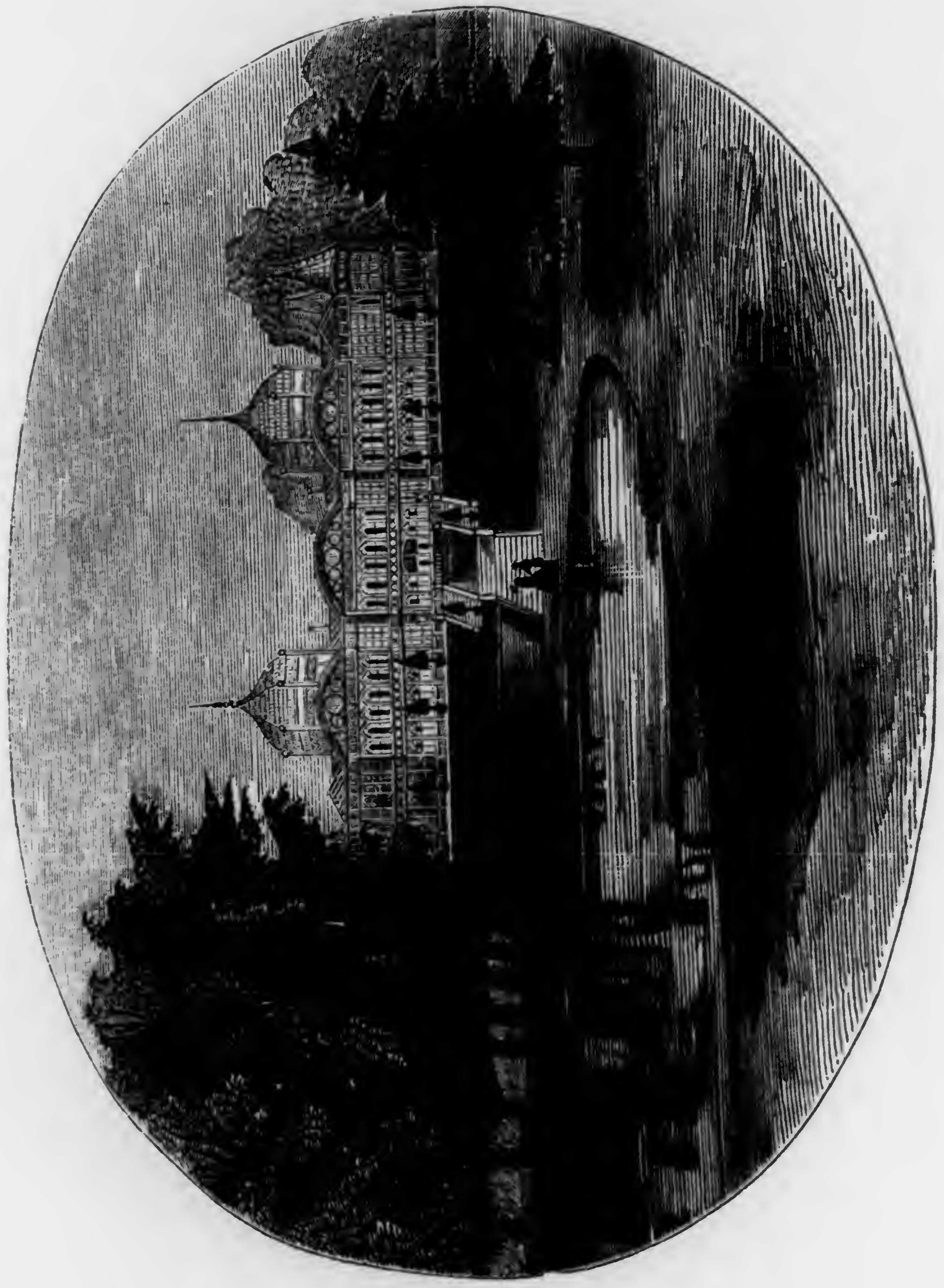
Dr. Edwards. It does not matter. The fermentation wanting room for expansion, will force the gases out.

Mr. Malinkrodt. It is contended that our climate is too warm, and hence to check the ascetic fermentation the wine is placed under a syphon. Our annual temperature is not as great as that of Italy and Southern Europe, yet they prevent the ascetic fermentation by placing the wine in cool places,—in deep cellars. Their wines are not only strong in alcohol, but retain enough of saccharine matter to make them palatable. If we follow the same course, we will have no need of artificial means of preventing our wines from souring.

Dr. Edwards. What Mr. Malinkrodt has said only confirms my opinion of the utility of the syphon. Until we have the appliances that make the syphon unnecessary, I do not see what better we can do than use it.

Mr. Colman. The experience of Europe, however, must eventually be our guide. It is, therefore, important to know what course they pursue.

Mr. Malinkrodt then called attention to the specimens of his grapes. The Union Village had not dropped a berry, and was entirely healthy in foliage. The Clinton he found an immense bearer, and very compact bunches. The Taylor, which is generally condemned for not bearing, he found immensely prolific, and set the fruit in compact bunches. He expects to see it take its place at the head of our Wine grapes."



Conservatory at Enville Park, England.

THE GARDENER'S MONTHLY

DEVOTED TO

Horticulture, Arboriculture, Botany & Rural Affairs.

THOMAS MEEHAN, Editor. W. G. P. BRIN[illegible], Publisher. DECEMBER, 18[illegible]

Hints for December.

FLOWER-GARDEN AND PLEASURE-GROUND.

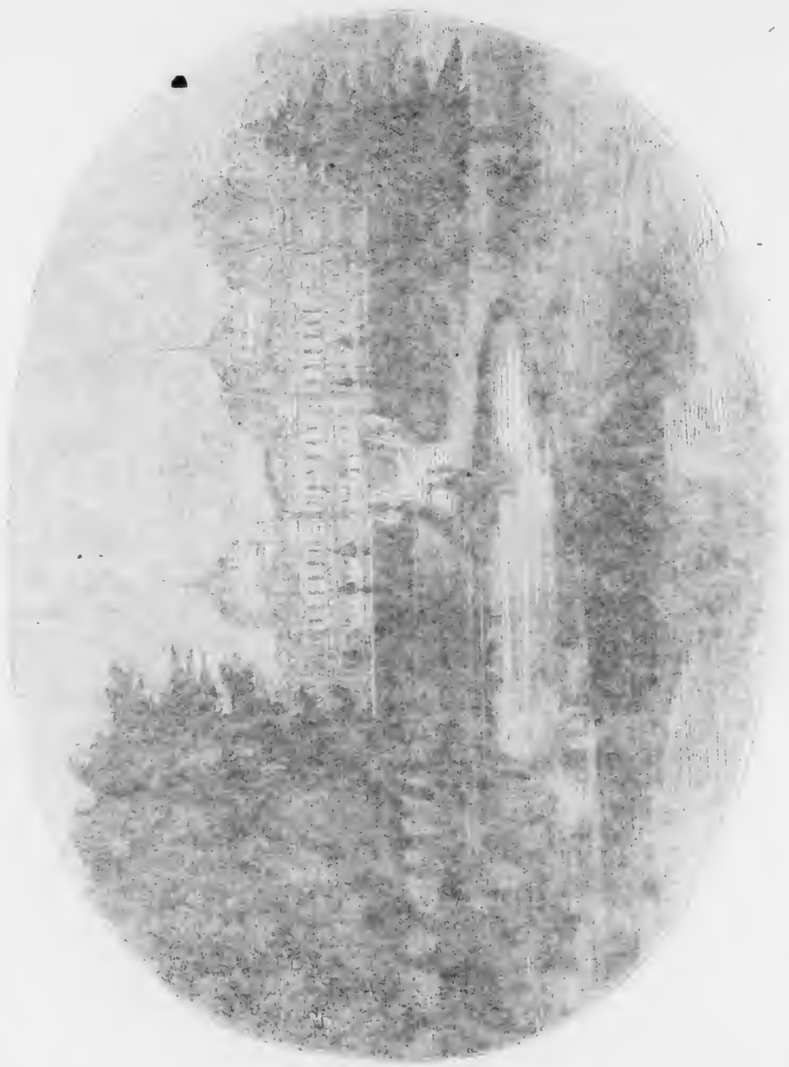
The principal work of the [illegible] department lies principally in pruning and [illegible]ming, and preparing for the more active spring season. "A job well planned is half performed" —so it is said—at least it will take but half the work to do it.

A great want of most gardens is a protective belt of trees against the cold quarter. No one who has not particularly examined the matter, can have the least idea how much more valuable a sheltered place is over an exposed one. Flowers, fruits and vegetables come forward much earlier in spring and are prolonged many weeks in [illegible]—and while the exposed place is a perfect [illegible] in winter to live in, the well sheltered [illegible] winter [illegible] agreeable change from the [illegible] enjoyments of a long summer's pleasures. We are ourselves often astonished at the great difference between exposure and shelter. In [illegible] neighborhood, as we write, Salvia splendens, Heliotrope, Geraniums, etc., are in full bloom in gardens sheltered by trees on the Northwest, while not a hundred yards from the one in our mind's eye, the same flowers are black, and have been for weeks back; and in the middle of winter a place surrounded by evergreen belts will be more like a spring scene, than the contrast would be expected;—and the rare and tender trees and shrubs will grow in such sheltered spots with vigor, when in other places they can scarcely be made to [illegible], and are then [illegible] classed with the half-hardy things.

[illegible] improvements till spring, [illegible] where the trees are to go, and [illegible] to put in [illegible] grow fast, always [illegible] young and thrifty [illegible] and [illegible] make a better show [illegible] better show in [illegible] than the [illegible], no matter [illegible]. The best kind of Evergreens for making [illegible] of their rapid growth and warmth imparting character are the White Pine, Scotch Pine and Norway Spruce; among deciduous trees the [illegible] Silver Maple, Birch, Scotch or Sycamore Maple, and the Cottonwood Poplar, which can be cut away as the others grow.

Besides trees for shelter, good [illegible] the [illegible] service of shelter, [illegible] —setting [illegible] now [illegible] their [illegible] in the [illegible] on [illegible].

[illegible] as well as [illegible] and [illegible] and pruning. [illegible] close quarters [illegible] the [illegible].



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DECEMBER, 1865. VOL. VII.---NO. 12.

Hints for December.

FLOWER-GARDEN AND PLEASURE-GROUND.

The principal work of the winter season in this department lies principally in pruning and trimming, and preparing for the more active spring season. "A job well planned is half performed,"—so it is said,—at least it will take but half the work to do it.

A great want of most gardens is a protective belt of trees against the cold quarter. No one who has not particularly examined the matter, can have the least idea how much more valuable a sheltered place is over an exposed one. Flowers, fruits and vegetables come forward much earlier in spring, and are prolonged many weeks in autumn,—and while the exposed place is a perfect Iceland in winter to live in, the well sheltered, cosy place makes winter merely an agreeable change from the cloying enjoyments of a long summer's pleasures. We are ourselves often astonished at the great difference between exposure and shelter. In our own neighborhood, as we write, Salvia splendens, Heliotrope, Geraniums, etc., are in full bloom in gardens sheltered by trees on the Northwest, while not a hundred yards from the one in our mind's eye, the same flowers are black, and have been for weeks back; and in the middle of winter, a place surrounded by evergreen belts will be more like a spring scene, than the winters it would be exposed—and the rare and choice trees and shrubs will grow in such sheltered spots with vigor, when in other places they can scarcely be made to exist at all, and are then truly classed with the half-hardy things.

The time to appreciate the force of our remarks is now approaching, and as it is said that when a certain ancient personage was sick "he a saint would be," but when he got well "so sorry a saint was he," we would not have our friends put off thinking of these improvements till spring; but stake off at once where the trees are to go, and have good soil hauled close at hand to put around the roots, to make them grow fast, always remembering that a young and thrifty tree in good soil will make a better show,—a much better show in a few years than the 'biggest' trees, no matter how successfully transplanted they may be. The best kind of Evergreens for making belts, on account of their rapid growth and warmth imparting character, are the White Pine, Scotch Pine, and Norway Spruce; among deciduous trees the Larch, Silver Maple, Birch, Scotch or Sycamore Maple, and the Cottonwood Poplar, which can be cut away as the others grow.

Besides trees for shelter, good hedges serve the triple service of shelter, protection from trespass, and beauty,—setting aside their cheapness as compared with lumber fences, now that their proper management is understood, their superiority in the points we have designated gives them commanding claim on every ones attention.

Those who have already had their places well planted, so as to have some immediate effect from planting, as well as shelter, will have plenty to do at this season thinning and pruning. Trees should not be allowed to grow thickly into each other. One fat bushy specimen is worth a score of miserable, lean thin things. In pruning trees or shrubs into close quarters follow no Procustean rule, but study the habit of each variety, and trim to suit the various forms. Where this form cannot be maintained without injury to some other tree, better cut it away altogether. Nothing annoys a man of taste more than to see a laborer going the rounds in winter with a hedging shears, 'trimming' each bush in to a round close bunch, like a goat cropped bush on a mountain side; which are pretty enough

once in a while, but monstrous when the rule.

Nothing 'pays' like surface dressings of manure or good soil to Evergreens and ornamental trees. Life is too short for mere natural growth. It is a pardonable vice to wish for large trees. Put on two inches of good stuff, and see how they will go ahead.

Flower-beds do best when new soil can be occasionally given them. These things can be attended to now.

PLANT HOUSES.

The world seems fond of fashions—new fashions. Sometimes they seem foolish to some of us; but we think that if "whatever *is* is right," ever is to be commended, it certainly is in the now prevailing fashion of having cut flowers continually on the parlor table. The gardener who cannot maintain a regular supply of flowers for cutting, has as poor a chance of retaining his situation in these latter days, as in years gone by he would if he could not get Tomatoes by the fourth of July, or Cauliflowers on Washington's birth-day. To have flowers bloom freely, not only heat and moisture are essential, but fresh air on every occasion. It is even good economy to lose some heat in order to gain the advantage of opening ventilators, or windows, if the weather outside be not favorable enough without. The Camellia, Azalea, Daphne, Stevia, Poinsetta, Euphorbia, Violets, Tree Carnation, Lopezia, Eupatorium, Cineraria, Perennial Candytuft, Deutzia gracilis, Tea and Noisette Roses, Epiphyllum truncatum, Hermannia odorata, Acacia, Bletia, Scarlet Geraniums, Strelitzia, Chorizema, and most kinds of Australian plants, Verbenas, Bouvardia, Heliotrope, are a few of the best things to grow for cutting, that occur to us as we write. The temperature should not often be below 55° to be secure of a good bloom.

Insects are apt to be troublesome in growing houses,—particularly Red-spider, Green-fly, and Mealy-bug. A free use of the syringe is a good preventive. Tobacco smoke, in two or three light doses, is still the best thing for the Green-fly. The Red-spider, fortunately, shows his depredations more villianously than most insects,—light yellow lines or spots marking almost at once the scenes of its depredations. If one has good eyes, the finger and thumb will keep him down, as a slight and rapid passing of the finger over the leaves easily crushes his little body. When he becomes an "army with banners," more scientific approaches must be made to give any show of success.

VEGETABLE GARDEN.

Very little can be done now in this department, except by way of preparation for another year.

Manure can be placed on the ground wherever required, and Asparagus beds, if not already done, should have a slight covering of it. Beanpoles, Pea-brush, and stakes of all kinds should be got now, the tool-house gone over and put in order, and every thing kept in good order and studiously in its place. When the season of operations commences, there will then be nothing to hold back the attention.

Where there can be a heat of 60° commanded, Bush Beans can be easily grown in pots, and can be gathered in two months from the time of sowing.

If there is abundance of leaves or manure at command, and small frames, beds may be put up for early spring salads, at the end of the month.

Radishes and Lettuce are, however, very impatient of too much heat; they will come on well if the temperature be kept at 45°. When it goes above that, the sashes should be lifted entirely off.

The same remarks apply to the Potato and the Early Horn Carrot.

Cauliflowers in frames require all the air possible. Never allow them to become dry; this is the cause of many failures by way of "buttoning off."

Communications.

THE EFFECTS OF COLD ON FRUIT-BUDS AND TREES.

BY DR. JAMES WEED, MUSCATINE, IOWA.

Years ago, when our young trees first gave promise of fruit, on a cold afternoon in spring, with some indications of frost at night, we inquired of an experienced cultivator if it would kill the fruit. He replied that it was not far enough advanced—the buds being about half expanded—that the flowers must be fully open, or nearly so to be injured. My gardener confirmed this opinion. He said when a spring frost killed the Apple or Pear, the injury was to the rapidly elongated stem of the fruit, which, at the period of full bloom, was very succulent, and that a few days after bloom the stem became so woody that the fruit would often escape injury from quite severe frost.

A severe frost occurred the past spring on the 8th of April, after the buds had become considerably swollen, the mercury falling to 15°, but we apprehended no injury would result to the fruit, as the buds had not opened.

Peach-buds and a part of those of the Early Richmond and Morello Cherries were killed by a minimum temperature of 16° in December, and as the season of inflorescence approached, we watched with much solicitude the amount of bloom the trees would show, which when fully open we thought sufficient for a medium crop of fruit; but on a careful examination of the flowers a large proportion of them were destitute of the pistil, just as we had had noticed in previous years and regarded as abortive blossoms.

The Apple and Pear blossoms of particular varieties, and on particular trees, developed their blossoms very slowly and irregularly,—the stems of one or more flowers in a bud elongating much faster than the others,—which, though apparently sound in the rudiments of the flowers and pedicle, were retarded in their growth from some cause. An examination of the fruit spurs showed the cambium discolored, especially near the extremity, and at junction with the base of the bud.

In a former communication we showed that in severe climates, where the cold of the winter is apt to kill the germ of the Peach, it often kills the cambium and sap-wood of the past year's growth over the entire tree, the bark usually retaining sufficient vitality to deposit a new annual wood over the inner dead tree. Our Peach trees in the open grounds are completely dead inside of the new wood of this year's growth,—the annual growth of '64 having been killed the past winter, as was that of '64 by the winter previous. They have made a fine growth this season, and to casual observation appear sound and healthy. We are not sure that a less degree of cold will kill the germ of the Peach in winter than that which kills the annual growth of wood; but the new wood of the Cherry will endure greater cold than the germ of its fruit, while in the Apple and Pear the germ is often uninjured when the cambium of the fruit spur is discolored, generally causing the failure of the fruit after flowering. In the winter 1855–56, so memorably disastrous to fruit trees at the West, this injury to the cambium of the fruit spurs was extensively apparent in some varieties—after a minimum temperature of minus 37 degrees in mid-winter—the blossoms of which withered and fell from the trees soon after flowering; while in other varieties, not a trace of discoloration could be seen, and their bloom was succeeded by an abundant crop of fruit. Some of the varieties which past that severe ordeal of winter cold uninjured, were much damaged by the cold of last April. These were mostly of summer Apples, from which we infer that the early and free circulation of sap in the trees, was the condition which rendered them unable to endure a temperature only as low as 15°, while in common with the germs of the Early Richmond Cherry, they had past safely in December a temperature of sixteen degrees below zero.

BOTANICAL NOTES ON CONIFERÆ.

BY DR. G. ENGELMANN, ST. LOUIS, MO.

[We have long been interested in discovering the rule by which the different organs of plants are formed. Morphology tells us that all the parts of fructification are merely leaves in a peculiar state of development, but the particular laws,—that by which this set of transformed leaves are made into petals, or that into stamens or pistils,—are still unknown. In the course of correspondence with scientific friends, we occasionally make some observations that may probably have some bearing on the question; and the present note from Dr. Engelmann, is the result of one such case.

Our friend will excuse us for publishing it, as we are sure he will have no objection to others sharing with us the information he imparts.—ED.]

In the last days of May I was delighted to receive your female Pinus pungens, together with a few other things. It was a great desideratum, and filled a gap in my investigations. I want now only one species, which I have been unable as yet to get, and that is P. australis; I have neither male or female flowers, nor do I know the position of the cones.

I was much pleased to see you pay attention to the position of the female aments in P. pungens, and that you found the difference from those of P. sylvestris, etc. Is it not strange that of all the botanists who most have handled these plants, no one had seen, or at least put the proper construction or value on, that difference in the position of the female flowers; Mr. Canby, of Wilmington, however, has noticed the same before you, after I had found it years ago in a number of American (N. American and Mexican) Pines, but in not a single European species!

P. sylvestris, Austriaca, resinosa, and most others, exhaust their productive powers with the appearance of the female flowers, and immediately following them, the terminal bud closes the vegetation in the axis for the present season; in P. rigida, pungens, inops, mitis, Taeda, Banksiana, and many others, the shoot continues to grow after the production of the female flowers, and, as if temporarily and partially exhausted, produces at first

only scales, no leaf bunches, then come again leaf bunches, and often again female aments, after which the whole process is repeated. Very exceptionally I find a terminal (or rather subterminal, because it is placed below the terminal bud) ament.

This constitutes, or rather indicates, a vital difference in the laws of vegetation: just as we find, *e. g.*, the umbel in Smilax herbarea produced from the axils of the scales below the regular leaves, while the closely allied Sm. pedunculata, which Gray unites with the former, the umbels come from the axils of the higher leaves. I consider this an essential difference. Different Violae show the same difference as those two species of Smilax.

Your view of arrested growth I cannot share. Besides—the Pines proper, as you know, bear flowers, male and female, on the new shoot of the same spring,—males at the base, females near the end (usually), or in the middle; males before the production of the leaf bunches, females after them. Abies, Larix, etc, are very different in these respects, as they produce male as well as female flowers from the axils of leaves of last year, or (in the case of Larix and Cedrus) at the top (terminal bud) of short branches of older growth.

You will find sometimes the bunches of leaves show their real nature of substituted branches by growing longer, and forming buds and branches between the original leaves. I have seen that in P. sylvestris and austriaca.

I think you are mistaken when you say that P. sylvestris will grow *this season* beyond the female flowers. I have never seen it; while, as stated above, it will always, or most always, be so with P. rigida, pungens, etc. You can now satisfy yourself of the truth of my observation in your garden. You will find old cones also, always at the end of the growth of one season, and may find 3 generations, cones of 3 succeeding years, on one axis, but always at the end of a years growth! This in P. sylvestris. In P. rigida, where the cones are more persistent, you will find them along the growth, the axis of this year, never, or scarcely ever, at the the end, for several years in succession.

In Pinus, as above stated, you see female flowers appear on the young branches *after* the formation of the males,—in Abies, as stated above, they appear at the branch of last year, and if I recollect right, higher up on the branch than the females. In Carex we find them mostly above the females, as you correctly state; in Sagittaria also, always above the females; but in some species of carex they appear *below* the females, and in some again above and below!

You know that the stamens appear outside or below, or earlier than the pistils, in the hermaphrodite flower; so it seems impossible to discover a uniform rule in these matters.

The female flowers I would rather consider as a bud, formed to continue the growth or propagation of the *species*, while the ordinary leaf-bud continues the growth or propagation (budding—planting Potatoes) of the *individual*.

Many thanks for what you sent. Pinus excelsa was quite sufficient for my purpose. The only Pine I am now after is P. australis!

By the way, you ought to try to get Pinus Peuce, of the Mountains of Macedonia, seeds of which were first sold last winter and spring by Messrs. Haage of Erfurt, Germany. Hooker makes it out the European form of P. excelsa, whether correctly or not I know not,—but I see that in your letter you allude to the same fact.

GRAPES, THRIP, &c.

BY A. HUIDEKOPER, MEADVILLE, PA.

The year thus far with us has been a remarkable one for the variableness of the weather. In July and August we had wet cool weather, and in September it was exceedingly warm. In mid-summer the thermometer has sunk as low as 40° under glass, and we have had frost every month of the year. Spring, summer, and autumn, would seem to have exchanged places in the round of seasons. At the time of my writing, (October 9th, the meadows have a luxuriant growth of grass, and the orchards and forests are as green and fresh as they usually are in June.

I have not observed that the capriciousness of the weather has had any unfavorable effect on the fruit in this region, except that the foliage of vines under glass ripened prematurely. I ripened sixteen varieties of foreign grapes under glass, and nine varieties of American out-door grapes, and had them all mature well except the Diana, some clusters on which colored well, but others will hardly ripen.

The result of the year would be but a repetition of the report I made for the *Monthly* December last.

The Troveron Grape has a habit of nisting, which I have seen noticed among English cultivators, but which does not appear to attach to other varieties in America. The nist or discoloration does not seem to injure it except in appearance.

Muscat Hamburgh was affected by shrivel, or shanking, a disease or habit which seems to be very little understood by cultivators, judging from the various causes assigned for it in the books. It has been usually considered as found only under glass; but I have seen very well defined instances of it out of doors, and the confined air theory or lack of ventilation as a cause will have to be abandoned. I put a graft or two of it in Black Hamburgh stocks this spring, and when the canes bear will report if there be any change thus produced in its habits; if so, (as some one who has experimented says there is), it would indicate that we must look to the roots of the plant for the cause of shrivel.

I kept some of my out-door Grapes lying on the ground this year, until the first week in May. I laid all down except one, (York or Franklin), which was too large to be so treated. It was the only one affected with mildew, and it not to any injurious extent. The quantity of grapes raised in the country would be increased a thousand fold, and the quality much improved, if farmers would trim their vines thoroughly in November, and pin them to the ground, with a very light covering to keep off the winter's sun. The brush heap of half dead half living wood and leaves one often sees on an arbor or trellis in the country, is rather a burlesque on grape-growing than an experiment. Even if a vine will live through the winter, (and the kinds are not many that will stand the ordeal), the circulation will be better and the fruit finer for not exposing it to such a test of hardihood.

I have been annoyed again this year with the Thrip, which has only shown itself within a few years, and appears to be rapidly on the increase. I mentioned in a former article the difficulty of applying smoke without injury to the fruit. If driven out I think it would soon return again, and the true direction to look for a remedy will be in some application to the leaves that shall prove distasteful to it. I tried tobacco water two or three times this season, and thought a check was given to the insect; but being absent from home, the application was not followed up, and when I returned the fruit was too large to renew it. I made a strong decoction of red pepper, and tried it on some seedling vines; but the insect did not seem to object to having its food thus seasoned. The habit of the insect is to burrow in the ground all winter. A few of them can be found on the surface in the grapery at almost any time in the winter, when the weather is warm. About the middle of June they commence on the lower leaves of the grapery, and work slowly upwards, propagating rapidly. In October they congregate in numbers on the upper glasses of the vinery, when they are easily destroyed by burning paper attached to a rod, and passing rapidly beneath them. They can also be destroyed partially during the season, if one will take the trouble, by shaking the vine while holding beneath them a vessel filled with water sufficiently hot for the purpose.

Smoke seems to annoy the Thrip, but I have not found it sufficient to suffocate it, and I think the true remedy will have to be found in the direction I have indicated: by an application to the leaves. Should be glad if any one who has given to the extract of Tobacco a thorough trial, would report upon it in the *Gardener's Monthly*.

THREE FACTS.

BY COL. D. S. DEWEY, HARTFORD, CONN.

At the time of finishing up my Potato planting, in the spring of '64, I was compelled, by 'Hobson's choice,' to use for seed one-half bushel of small——quite small—Early Junes. The product was just twelve bushels of good Potatoes,—a fair average crop for size,—at the rate of twenty-four bushels for one.

In the winter I selected, for family use, the medium-sized ones, and this spring planted the small ones (not the smallest) uncut; and this summer and fall have realized a good crop again,—Natural selection, ect.?

This spring I planted twenty one long rows of Strawberry plants,—seven beds between my Grape trellises. The last bed of three rows (all planted 18x16), was made up of very small plants; in fact they were the extreme runners from a bed of Triomphe de Gand. 'It happened so' in consequence of running a line to straighten the outside edge of an old bed grown *en masse*. Now, these three last planted rows have grown the best, and are the most promising for a crop next spring, of the whole twenty-one, all other things being equal,—Exceptions, etc.?

Last summer the three topmost limbs of a Flemish Beauty Pear tree (standard, say 20 feet high), were badly blighted. I sawed them off at a short distance below the discoloration. This spring I again sawed them off some four or five inches, and set in each two grafts of summer Pears (D. d'Eté, D. Boussock, and Tyson). These grafts have grown with uncommon vigor and healthfulness, and no symptom of blight has appeared on any part of the tree or the scions,—Atmospheric?

FERNS AND MOSSES.

BY THOS. P. JAMES, PROF. OF BOTANY TO THE PENNA. HORTICULTURAL SOCIETY.

Read before the Society, October 3d, 1865.

We do not propose to go back to the Cryptogamic flora, which clothed the earth's surface in times long past, and describe those gigantic Lepodendra and Sigittariæ which Geology teaches possessed the land anterior to the animal creation, but to confine our attention to the existing comparative lilliputian vegetation of flowerless plants which form an interesting theme.

The study of the Cryptogamia plants when earnestly entered upon becomes absorbing. It is the remark of some author, that it is not surprising that any one whose mind is in an ordinary degree susceptible of intellectual pleasure, can attain even to a superficial acquaintance with the structure and economy of Cryptogamous plants, without appreciating the enthusiasm which the prosecution of such investigations so generally inspire in those who make the study a speciality,—an enthusiasm in an inverse ratio with the apparent insignificance of the object.

The Ferns are the most beautiful and generally admired of this class of plants and being the most conspicuous are especial favorites with students. They constitute so attractive a portion of creation that no artist of the present day fails to introduce them in depicting a landscape: their graceful foliage and elegance of form serve to give the finishing touches to an admired work of art.

Of late years their cultivation has become very fashionable, especially under glass; and when introduced among the larger, flowering plants, in a greenhouse or conservatory, they add greatly to the attraction of the entire collection; indeed, without them it would be meagre and wanting in completeness. When grown by themselves, in a Fernery, from their beauty and great variety of forms, they present objects the most pleasing to the eye and interesting to the casual observer.

So universal has the cultivation of the Ferns and Lycopods become, that no lady, who has the least pretensions to taste and refinement, and has the leisure, is without a fern case or vase of these plants; and even in a phantomized condition they are objects of attraction. It is therefore eminently appropriate that a more intimate knowledge of the structure and development of the organs of these interesting plants, should be disseminated.

To properly understand the subject, and give it position, it would be in order to remark that all plants in systematic Botany are described under two general series, founded on characters of the easiest distinction, viz.:

First Series — the higher one,—embraces the Phænogamous or flowering plants, which produce real flowers, exhibiting stamens and pistils and seeds, which contain a ready formed embryo or young plantlet.

Second Series,—the Cryptogamous or flowerless plants, embracing those of the lower or simpler grade, destitute of stamens and pistils, and in fructification producing simple cells or homogeneous bodies termed spores from which originate the the plant,—no manifest embryo before germination.

The term Cryptogamia is derived from two Greek words meaning hidden organs of reproduction.

Class—*Acrogens* comprises those plants which have a distinct axis, their stem and branches growing from the apex only, and which do not increase in diameter, containing woody fibre and vessels, and usually with distinct foliage.

The Order Equisetaceæ or Horse-tail family are leaf-less plants with rush-like hollow articulated stems, of little apparent beauty, and therefore not cultivated, yet of interest in their structure. We pass this and proceed to the next order.

Filices or Ferns which consist chiefly of horizontal rhizomes or root stalks, and stipitate leaf-like expansions called fronds, which are mostly circinate or rolled up in the bud, and bearing on the veins of their lower surface or along the margins, the simple fructification, which consists of one-celled semi-transparent spore-cases—Sporangia—opening in various ways, and discharging the numerous minute spores.

To Ferns indigenous to this country will our remarks be confined.

The Order Filices is divided into three very distinct sub-orders or families: I. Polypodineæ; II. Osmundineæ; III. Ophioglosseæ.

The Polypodineæ—true Ferns—have the sporangia collected in dots, lines, or variously shaped clusters, called sori or fruit dots, on the back or margins of the frond or its divisions; stalked, cellular, reticulated; the stalk running into a vertical incomplete ring, which, by straightening at maturity ruptures the membranous sides of the sporangium transversly on the inner side, discharging, with some force, the spores. Fruit dots are often covered by a membranaceous scale, called the indusium or involucre, growing either from the back or margin of frond.

This family is divided into seven tribes:

1. Polypodieæ — which embraces two genera: Polypodium and Struthopteris.

2. Pterideæ — which enumerates four genera: Allosorus, Pteris, Adiantum, and Cheilanthes.

3. Blechneæ—which contains but one genus: Woodwardia.

4. Asplenieæ—embraces three genera: Camptosorus, Scolopendrium, and Asplenium.

5. Dicksonieæ—having one genus: Dicksonia.

6. Woodsieæ—which has one genus: Woodsia.

7. Aspidieæ—which enumerates three genera: Cystopteris, Aspidium and Onoclea.

Sub-order II. Osmundineæ. The flowering Fern family, has its sporangia variously collected (large) destitute of any proper ring, cellular reticulated, and opening lengthwise by a regular slit. It is divided into three tribes:

1. Schizeæ—which embraces the two genera Schizæa and Lygodium.

2. Osmundeæ—which has only one genus: Osmunda.

Sub-order III. Ophioglosseæ. The Adder's-tongue family, has its sporangia spiked, closely sessile, naked, coriaceous and opaque, not reticulated or veiny, destitute of a ring, opening by a transverse slit into two valves, discharging very copious powdery spores; fronds straight, never rolled up in the bud. This family, with one tribe has two genera: Botrychium and Ophioglossum.

The Order Lycopodiaceæ. The Club-moss family embraces a low form of plants, mostly of moss-like aspect, having solid and often woody stems, thickly clothed with sessile awl-shaped or lanceolate persistent simple leaves, bearing the two to four-valved spore cases, sessile in their axils. The indigenous are represented by two genera: Lycopodium and Selaginella.

Genus Lycopodium has spore-cases of one kind, sporangia, resembling much those of Ophioglossum only larger, and are coriaceous, flattened, usually kidney-shaped, one-celled, opening by a transverse line round the margin thus two valved, discharging the subtle spores in the form of a copious sulphur-colored inflammable powder, familiarly known to pyrotechnists as Lycopodium, and used by them on account of its great inflammability. This genus is perennial, with evergreen one-nerved leaves, imbricated or crowded in four to sixteen ranks, and embraces nine species.

Genus Selaginella has its fructification of two kinds, namely, of spore cases like those of the Lycopodium, but very minute and oblong or globular, containing reddish or orange-colored powdery spores; and of three or four valved tumid oophoridia, filled with three or four (rarely one to six) much larger globose, angular spores, the latter either intermixed with the former in the same axils, or solitary and larger in the lower axils of the leafy four ranked sessile spike. Plants of this order are extensively introduced and cultivated in greenhouse and conservatories, and in great variety possessing much beauty by their carpet-like covering, and spreading dendroid habit.

We now proceed to the consideration of the second division of the subject,—the *Anophytes:* which are Cryptogamous acrogenous plants, composed of cellular tissue only, but with the general type or habit of the superior orders, growing upwards by an axis or stem, emitting roots downward, and usually furnished with distinct leaves, sometimes the stem and foliage confluent into a frond, and embraces the orders Musci and Hepaticæ.

The Order Musci. Mosses are low-tufted plants which emulate herbs and trees in vegetation and external appearance, and resemble an ordinary herb in miniature, exhibiting the general organs of root, stem, and leaves, arranged with as great regularity in their forms as the Phænogamous plants. They are by far the most curious and complicated of the Cryptogamia, having stems composed of elongated cellular tissue, strictly so called, chiefly in the form of parenchyma,—a tissue composed of angular and polyhedral cells, at least they have no distinct vessels or ducts, and no true wood in their composition.

Mosses take nourishment through the whole expanded surface, principally, therefore through the leaves; but the stems also shoot out delicate rootlets composed of slender cells which grow downwards, and doubtless absorb moisture.

The organs of fructification exhibit greater diversity and more complicated structure than the Ferns. The two kinds of organs of fertilization have been long recognized, and their functions to some extent understood. The antheridium bears the same relation to the archegonium which the anther does to the pistil in Phænogamous plants. Fruit is never produced without the co-operation of both these organs.

By fertilization a sort of pod is developed—the sporangium or spore case—which is filled with a multitude of spores. This organ, from its general resemblance to the pistil, is termed a pistilidium. The antheridium is merely a cylindrical or club shaped sac, composed of a-single layer of cells in form of a delicate membrane, containing great numbers of minute vessels—spermatozoids. The sac bursting at the apex when mature, discharges these vesicles. The pistilidia which appear at the same time as the antheridia, and often mixed with them, are flask-shaped bodies with a long neck, composed of a cel-

lular membrane; the neck a perforated open canal, through which the spermatozoids penetrate, thence proceed the sporangium or capsule, in which are produced countless numbers of minute spores. Rarely more than one archegonium comes to perfection, the others remain in an abortive state, attached to its base.

The perfect archegonium becoming enlarged and distended by the increase in bulk within the contained vesicle, which latter, as it elongates, is at length torn asunder at an horizontal fissure near the base, the upper portion being converted into calpytra, and the base into the vaginula. It is now the fruit stalk, with the base inserted in the vaginula, and the apex sheathed with the calyptra, which, if it is split on one side, is hood-shaped or cuculliform, if not, it is mitre-shaped or mitreform. When the pedicel has attained its full height, its apex swells and becomes changed into the capsule. The pedicel continued through the capsule becomes the columella, around which the spores are generated within a membranous sac,—the sporular sac which lines the cavity formed by the external walls of the capsule, when the pedicel becomes enlarged uniformly under the capsule it forms an apophysis, when protuberant on one side only a struma.

The capsule at maturity dehices by irregular ruptures, by four longitudinal slits, or by a deciduous operculum or lid: the latter the most common form. Between its margin and the rim of the capsule occurs an elastic ring of cells, the annulus often wanting. Arising from the mouth of the capsule is found a single or double row of rigid processes, collectively the peristome, in number always some multiple of four, those of the outer row being a continuation of the inner wall of the capsule are called the teeth; those of the inner one a continuation of the sporular sac,—the cilia, their intermediate smaller processes, ciliolæ.

Intermixed with the reproductive organs are cellular jointed filaments,—paraphyses. The leaves immediately surrounding the antheridia are called the perigonial leaves; those around the archegonia or the pedicel the perichætial leaves.

The Order Musci is divided into sub-orders, divisions, tribes, genera, and species.

Sub-order Sphagnaceæ, are the Bog or Peat Mosses. They are perennial, aquatic, and amphibious, growing in dense patches of a whitish or pale green color, of soft flaccid habit, differing from all other known mossees in the fasciculate insertion of the branches, structure of the leaves, of the capsule, and in the absence of proper roots.

Sub-order Andræaceæ, are small alpine or subalpine mosses, of a dark purplish or blackish brown color, growing on rocks, operculum none, capsule dehiscing by four longitudinal fissures, sessile on the fleshy pedicellate vaginula.

Sub-order Bryaceæ—Division Acrocarpi—has the fruit terminal on the main stem, or rarely terminal on short lateral branches. It is sub-divded into Cleistocarpi, which has capsules without an operculum, and rupturing irregularly, and embraces the Phasceæ, which are diminutive species, generally stemless, and mostly annual, growing on the ground; and Stegocarpi, which has the capsule dehiscing by a deciduous operculum, and embraces above twenty tribes, many genera and numerous species, and includes all the remaining plants which fruits from the apex of the stem, from Weisiæ to Splachneæ.

The Division Pleurocarpi embraces those plants which have the fruit lateral on the stem or branches, and peristome mostly double. This division contains eleven tribes, beginning Fontinaleæ and ending Hypneæ.

We will close by submitting a familiar example to illustrate the structure, mode of inflorescence, and fructification; and select the Bryum cæspiticium, one of the most common Mosses growing in tufts on the ground, in the crevices of rocks and walls, The genus Bryum is an an acrocarpous moss, fruit terminal; this species is dicœcious,—the male and female flowers on separate plants, existing generally in proximity.

The plant containing the male flowers, when dissected in water, exhibits at the apex of the stem, a cluster consisting of the antheridia,—the bladder-like sacs which, after maturity, remain, becoming of a reddish brown color, mixed with paraphyses, or jointed filaments; the inner row of surrounding leaves constitute the perigonial leaves.

The fertile or female flower is found in the vicinity of the male in similar tufts which upon dissection presents clusters of archegonia, the slender flask-shaped bodies intermixed with the paraphyses. But one of these bodies comes to maturity, the rest remain abortive, attached to its base. In the progress of development the fertile archegonium has ruptured its vescicle at an horizontal line near its base, the lower portion becoming the vaginula, the upper portion sheathing the apex, the calyptra, and the rudimental vesicle,—the pedicel,—which has enlarged at the apex into a pendulous pyriform capsule, having the central columella, around which the spores are generated within the sporular sac which lines the cavity of the capsule. The mouth of the capsule is closed by the operculum or lid, and intermediate between the lid and the margin of the capsule is seen the annulus or elastic ring, composed of large cellular tissue, which by its hygrometric action causes the operculum to fall off at maturity, displaying the peristome, a beautiful arrangement, which regulates the escape of the spores. The peristome is double, the exterior row, has 16 teeth, the interior a membrane divided half way into 16 carinate cilia, alternating with the teeth and intermediately ciliolæ. The erect leaves surrounding the archegonia are the perichætial leaves. Other species of this genus have the male and female flowers in the same perichætium.

A species of the genus Hypnum might be given to illustrate the division of pleurocarpi, the lateral fruiting mosses, but apart from that characteristic it would be but a repetition of the description, and therefore superfluous.

TALKS IN A GARDEN.

Number Four.

BY L.

Uncle J.—My dear John, some months have passed since we met to chat a half hour in the summer-house, what do you say to another talk upon subjects akin to those which then interested us, and were not finally dismissed?

John L. K.—*Semper paratus*, every ready to receive instruction, I am a willing listener. *Dulce est dissipere in loco* is a good Latin quotation for a holiday, and I shall not exert myself to effort beyond that necessary to understand your well intended remarks, while this warm, close atmosphere envelopes us, and reminds of the fatal folds which enwrapped old Laocoon and his devoted sons.

Uncle J.—You pleased yourself when last we met, with the imaginings of the nature of my thoughts over my Strawberry-beds, which I had then just left, after giving them a timely weeding, and had trained the young runners 'in the way they should go.' Your suggestions were wide of the mark. We will revert to my musings while thus employed. You should not expect very profound reflections suggested by a Strawberry-bed, at least while laboring diligently and perspiring freely. In these humble plants we have an illustration of the happy results that flow from the application of the researches of the botanist and the horticulturist in their attempts to improve the crude forms and products of nature. As I spread out and set into the soil the young runners for new plants, I could not but admire the means by which the Creator had arranged that the Strawberry should so rapidly multiply itself, not by the slow process of growth from seeds, but as it were by producing at once full grown offspring, and almost deserving to be termed viviparous. The variety of plants in my beds, Albany Seedling, Russel's Prolific and French's Seedling have grown and spread beyond all precedent with me, and I thought as I weeded and planted the young growths, that the ex-Emperor Diocletian, at Salona, among his Cabbages, was not half so happy as I, and that like him, I would not share with Andrew Johnson the Presidency, were I invited so to do, would you?

J. L. K.—I rather think not. I shall postpone my aspirations for the presidency. But then, I think while there is any money in the treasury to pay my salary, I would prefer to enjoy it rather than bend my back over a Strawberry-bed.

Uncle J.—My dear boy, It were better to bend your back to honest industry, than to bow to power or truckle for place and office. Do not despise the day of small things. You appear to think that raising Strawberries would not afford you as much pleasure as I have suggested may arise therefrom. Do you remember the fine reply of Madame Helvetius when invited by Napoleon to remove to Paris? "You have no idea how much happiness can be found in four acres of land." The so-called great know indeed nothing of those pure springs of pleasure which flow from the performance of simple, humble duties. Some who have put off greatness, or been stripped of power, have learned alas! too late, that "Vanity of vanities, all is vanity." What a satire upon the utter inability of rank and wealth and gratified ambition to confer real happiness, was that supplied by Napoleon himself, when after many hours labor with the spade and hoe, planting his shrubbery, and dressing his peas and beans, he exclaimed, as fatigued he reposed and reviewed the well-spent time, "this has been one of the happiest days of my life!"

John L. K.—But how about old Diocletian, the ex-Emperor, did he love Cabbages? I do not remember that he was famous for any thing but his persecutions of the Christians. I have seen a coin of his reign in your cabinet, which you told me is more than 1500 years old.

Uncle J.—I have such a coin with the true Verd-antique, on which the Emperor is represented bearing a crown much resembling an iron ring, from which arises several long sharp spikes, forming altogether so hard a head-dress, no wonder he willingly laid it aside. The anecdote told of him is worth recalling, for while it has made the much abused Cabbage classical, it adds to the testimony

borne by those who have worn the purple, or basked in the smiles of princes, that the real pleasures of life are within the reach of all, and that they may be found in the performance of the humblest acts.

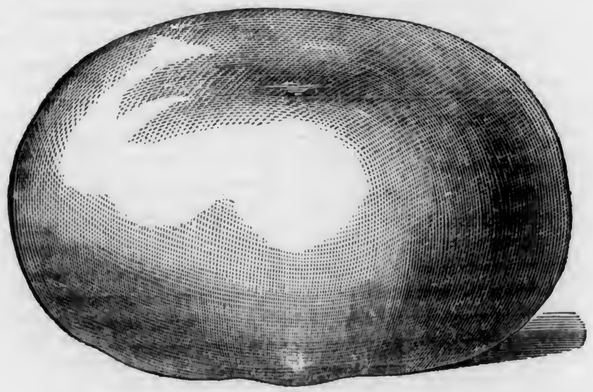
Diocletian abdicated the throne and retired to Salona, in Dalmatia. His partner in power also, by agreement, retired; but Maximianus, his co-Emperor, not having the firmness, or the tastes, perhaps, of Diocletian, tried sometime thereafter to recover his position, and wrote to his compeer to induce him to do the same. "Were you but to come to Salona," he replied, and see the Cabbages which I grow in my garden, with my own hands, you would no longer talk to me of Empire." This amateur gardener ranks among the most distinguished of the Roman Emperors, and his conduct after his abdication shows that his was no common mind. He is charged with the persecution of the Christians, but this was rather the work of Galerius, who instigated it, and continued it after the abdication. He used to say that the best intentioned man must find it difficult to govern well, since he could not see every thing with his own eyes, but must trust to others, who often deceive him. To use his own expressive phrase: "*Bonus, cautus, optimus venditur Imperator;*" or, as it may be literally translated, "The good, the cautious, the best Emperor is sold!" He was the last Emperor that enjoyed the honor of a triumph; but surely never Emperor more truly triumphed than when his

> "Self-corrected mind
> The imperial fasces of a world resigned;
> The sword of Empire shunning for a spade,
> In calm Salona's philosophic shade."

J. L. K.—Why, Uncle, you appear to think more highly of the gardener than of the Emperor. You do not aspire to the purple, I imagine.

UNCLE J.—Do not, my dear boy, permit yourself to be deceived with tinsel or glitter, "all that glitters is not gold." Far happier would many have been had they early learned the lesson, that Fame is the most empty and delusive of bubbles, and that political notoriety is unworthy the consideration of a wise man, and will not gratify a truly good one. Ambition has not its growth in wisdom or in virtue, and I am half inclined to believe that all who seek preferment, with or without merit, or exert themselves to attain distinction in pursuit of gain, or place, or name, are inferior to the wise and worthy farmer in real utility and manliness. Desert will come unsought.

> "Give fools their wealth and knaves their power
> Let fortune's bubbles rise and fall,
> Who sows a field or trains a flower
> Or plants a tree, is more than all."



[TILDEN TOMATO.]

THE TILDEN TOMATO.

BY "NOVICE."

This highly valuable new variety originated with Mr. Henry Tilden, of Davenport, Iowa, in the year 1858. It was the result of a cross between the common large red, as one parent; and either the apple, peach or plum variety, as the other parent, *which* it might be difficult to state, as they were all planted in close proximity.

The plant is somewhat dwarf in habit, the branches rarely reaching three feet in length, even when trained on stakes. The fruit sets mainly within two feet of the crown, and often outweighs the vine. Plants from late sown seed, set out ten days after the Large Red variety, matured their first fruit twenty days in advance of the latter; the Tilden being ripe July 10th, and the Large Red July 31st. This was on what is called *late* soil.

As little or none of the fruit was sent to market, I can only speak *relatively* of its productiveness, which surpasses that of any one of 13 sorts I have thoroughly tested. I had a field of 47-100 of an acre of the Fejee and Large Red Tomatoes, which yielded 326 bushels, or at the rate of 694 bushels per acre.

The Tilden commenced bearing earlier, and continued nearly four weeks later than the other kinds, in fact have now (Oct. 26th) plenty of fruit upon them. I should not hesitate to estimate its crop at 800 bushels per acre.

In shape the larger fruit is uniformly *oval*, which is the normal form of this variety; the medium-sized fruit are round—biscuit-shaped,—and the smaller ones are spherical. The warty excrescences, about the calyx end, which so often disfigure the fruit of other varieties, are never seen in the Tilden.

The color is a brilliant scarlet, and the skin is smooth, glossy, and rarely wrinkled. The flesh is remarkably solid, and high flavored, giving a richer and less watery pulp when cooked than any other. Its crowning excellence, as a market sort, is its unequalled *keeping quality*. The first fruit which ripened on my vines, July 10th, was gathered July 19th, still in eatable condition. It may fairly be relied upon to keep 5 to 6 days after ripening.

It is essential to the preservation of its purity that it be planted at a distance from all other kinds (preferably, like the writer, plant none other), and that seed be saved only from the largest and smoothest *oval-shaped* fruit. Manure well in the hill, as well as broad-cast. For *early* fruit let the vines run on the ground, or on brushwood, or straw. To secure the largest *crop*, train on stakes or a trellis.

However superlative the above description may seem, if any of your readers will try the Tilden once, they will have no occasion to regret taking the advice of a "NOVICE."

FAMILIAR BIRDS.

BY J. P. NORRIS.

VIII.—THE CHIMNEY SWALLOW.

This well known bird—the *Chætura pelasgia* of Naturalists—is not generally appreciated for the incalculable benefit which it confers on Agriculture, by destroying myriads of insects. As a general rule they are *tolerated*, but seldom do we see them protected as they deserve.

Originally building their nests in the hollows of trees and crevices of caves, it forsook its wild haunts on the advent of civilization, and as houses were reared made their chimneys its home. Here it builds its nest, lays its eggs and nurtures its young: its food consisting of noxious insects.

The manner it forms its nest is very singular. Flying to the nearest dead tree, it passes and repasses over it, snatch with its feet, and break off a small dead twig. It then flies to the chimney and plasters the twig to the inside by means of its saliva. The next twig is placed so as to partially overlap the first, and so on until the nest is the desired shape, which is that of a half moon with a projecting shelf coming out from the bottom. On these hard twigs the female deposits her eggs which are three or four in number, and of a pure white. The shell is so thin and semi-transparent that the yolk shows through it, and imparts a soft rosy tint. In about two weeks they are hatched, and then begins an extra destruction of insect pests, with which it tries to appease the craving hunger of its growing offspring.

It would well repay farmers to place mock chimneys on their out-buildings to invite the "Chimney Swallows" to make them their homes.

IX.—THE BROWN THRUSH.

This bird is blessed with a number of names. among which may be given "Thrasher," "French Mocking-Bird," "Ferrugineus Thrush," "Brown Thrush," and its proper or scientific name, *Harporhyncus rufus*.

It is inclined to be rather shy and retiring, and yet it sometimes shows sufficient familiarity to entitle it to a place among our "Familiar Birds."

The Brown Thursh is very abundant in some localities, while in others, in the same latitude and possessing equal advantages, it is almost unknown. We are inclined to think this the result of different treatment, it being very sensitive.

Its song—which is charming—is entirely different to any we have before described, and we doubt which is worthy of the award, the Brown Thrush or the Song Sparrow. Both are very sweet, and both are worthy of particular attention.

The Brown Thrush builds its nest usually in a hedge or on some shrubbery. Externally it resembles that of the Robin, but the interior is differently constructed, and the mud which lines that of the Robin is missing. In it the female lays four eggs, with a bluish-white ground, and covered all over with fine brown specks. If one of these eggs be touched, the parent birds will desert the nest. How different in this respect from the Cat-Bird!

The food of the Brown Thrush consists of insects and seeds, but it never disturbs fruits, and is consequently a valuable bird to encourage.

The above sketch closes the series of "Familiar Birds," and if we have been the means of increasing the knowledge and respect for the birds, and producing a single resolution for their protection, we shall be well repaid for our time and labor.

KEROSENE FOR DESTROYING INSECTS.

BY SWIFT.

The simplest remedy yet offered for the destruction of insects in Plant-houses, the easiest in its application, and the most efficient for that purpose, is the hot-water remedy, for which idea the horticultural community are indebted to the pages of the *Gardener's Monthly*.

With large plants a difficulty presents itself, in one not being able to heat a sufficient volume of water to immerse the plants in. Whenever this happens to be the case, other means have to be adopted for destroying the insects.

I am satisfied, from experiments made, that Kerosene oil, when applied, is certain death to most insects injurious to vegetation. And a series of experiments, which I lately conducted with success, leads me to think that on certain plants this fluid can be used in a raw state without danger to the plants in question. I give some one of the experiments in detail, as the result was highly satisfactory in each case, and quite contrary to what I anticipated.

The first plant experimented on was an Orange tree. With a saucer full of oil and a feather I began operations. I have used a sash tool, which answers the purpose better. After oiling the plant, the scale rubbed off quite easy. Two weeks later I examined it, and found a few young scale on some of the leaves; I gave it another dose of oil, the plant having commenced to grow at the time. Since then the Orange tree has made an entire new growth of wood, and the old leaves remain firm, looking as fresh and green as ever. Not a single leaf or bud was injured by the operation.

The next experiment was on four Oleanders. These plants had been severely pruned the winter previous, consequently they had made a new growth of wood from three to four feet high when operated on. Two Acacias—armata and longifolia—which had their flower-buds formed at the time. Also on a Sago Palm,—after dosing this plant well with oil, it began to grow, having previously remained dormant fifteen months,—destroyed the scale, but the plants were in nowise injured.

I next tried it on a fine healthy Lemon tree, that had a few scale on it—not many; they could have been rubbed off without much trouble—but I wished to see what effect the Kerosene oil would have on a plant that had finished its summer growth. In less than one month from the time the tree was operated on, it had made young wood a foot or more in length. For a few days after being oiled the leaves partially drooped, but with this single exception, which was only temporary, neither wood, foliage nor fruit were injured,—destroyed the scale.

One peculiarity I observed in connection with these experiments worth mentioning: all the plants made a very remarkable growth after being oiled. Does the oil possess any inherent property that promotes unusual vitality in the plant? or, is it that the plant being checked in its natural growth by these parasites, bursts into renewed vigor on their being removed?

I am not prepared to say at present, to what extent this oil may be used on plants without injury to the plants themselves. So far as my experiments have gone—and they extend over a greater field than it is possible to explain within the limits of one short article—I am inclined to think the plants are few in number that Kerosene oil will injure.

POTATO CULTURE.

BY A. W. HARRISON, PHILADELPHIA.

In accordance with a promise, made through the Editor, to the readers of the *Monthly*, the following brief summary of experiments, made during the season of 1865, is respectfully presented. They were undertaken with a view to test the productiveness and general character of the leading old, and some of the new varieties, and to confirm the experience of a previous year, in a radical change of system in Potato culture.

In the season of '64 one variety, the Cuzco, was selected, to test the relative value of cut and whole Potatoes for seed. An acre of ground was planted with sets of different sizes, from one eye up to a half Potato, and several rows of large whole Potatoes. Each set was fertilized with a handful of raw bone-dust, and no other manure. The soil was *very poor*, almost entirely wanting in vegetable fibre, and had not been manured for several years. The yield of each class of sets was, owing to an accident, not carefully measured, but the marked difference in favor of the whole Potato was patent at a glance. The latter yielded at therate of about 275 bushels per acre.

Under the conviction that the current systems of culture of the Potato are radically wrong, and inevitably tend to degeneracy and disease, the following method was adopted for the present year:

1. Late in the fall plowed deep and subsoiled.
2. Early in spring plowed and subsoiled, across the winter furrows; then harrowed and rolled.
3. Opened furrows both ways, as for corn, 3 ft. *equidistant*, and so as to cover the Potato, when planted, 6 inches deep.
4. Planted *whole* Potatoes, the *largest that could* be had of the several varieties.
5. Dropped upon each Potato a handful (40 bushels per acre) of a compost of 8 parts wood-ashes, 4 of fine ground plaster, 2 of fine shell lime, and 1 of salt. Then covered and rolled.
6. The soil being much impoverished, was top-dressed with artificial fertilizer, 1000 lbs. per acre.
7. Cultivated three times each way, with Knox's horse-hoe, and so arranged as to leave the surface *entirely flat*. Then hand hoed three times, no hilling being allowed.
8. Dug, on a dry day, by hand, with a heavy, 5-tined digging-fork.

A portion of the field was top-dressed with 200 lbs per acre, of a mixture of Nitrate of Soda 1 part, and Sulphate of Soda 2 parts, producing an average increase of yield of 36 bushels per acre. It was applied however too late in the season to show its full effect.

The soil of the whole field was a rather heavy clayey loam, with micaceous debris intermixed, and essentially *late* in character. It should be remarked also that, with the exception of the Early Stevens, which was dug for family use, none were harvested until the *vines* were *thoroughly mature*. Roots of the Early Goodrich, of good size for the table, were found early in July.

The following table gives the results of the general experiments, showing date of planting, kinds, maturity, and yield in bushels per acre:

Planted.	*Kinds.*	*Matured.*	*Yield.*
March 28,	Early Goodrich,	Aug. 12,	190
" "	Seedling Mercer,	Aug. 21,	171
" "	Monitor,	Sept. 7,	
April 3,	Buckeye,	Sept. 4,	165
" 3,	Jackson White,	Sept. 5,	195
" 3,	Early Wendell,	Sept. 7,	90
" 3,	Early Stevens,	dug July 24,	81
" 4.	Dalmahoy,	Sept. 11,	186
" 4,	Garnet Chili,	Sept. 12,	129
" 4,	Bluecoat,	Sept. 12,	86
" 29,	Calico,	Sept. 15,	170
" 29,	Gleason,	Sept. 15,	151
" 29,	Cuzco,	Sept. 15,	225
May 15,	Goodrich No. 380,	Aug. 8,	181
" 15,	Goodrich No. 241,	Sept. 2,	179
" 15,	Harrison.	Sept. 6,	305
" 18,	Snowball,	Sept. 15,	171

The crops here reported, especially of the Goodrich Seedlings, are by no means large; they are rather a *minimum* than a *maximum* product. On another portion of the field, in better condition, where 72 bushels of the White Sprout was the yield last year, the Early Goodrich this year gave 234, and the Cuzco 262, bushels per acre. On other fertile soils in this vicinity, they have yielded from 300 up to (in one instance) 450 bushels per acre. With proper conditions of soil and culture an average crop of 300 bushels may readily be obtained.

The soil on which the *early* varieties were grown was in the poorest possible heart, and selected for the purpose of testing them under the most unpromising conditions.

It will be remarked that the method pursued is the reverse, in all respects, of that usually practised in this region. In place of cut tubers, planted closely in drills, with stable manure, hilled up with the plow and harvested with the plow, we have whole tubers of large size, planted 3 feet equidistant, with mineral manures and ashes only cultivated exclusively with the horse and hand-hoe, entirely flat, and harvested with the fork. It is not claimed that any thing *new* is here presented, for all of the different features of this course have been at various times practiced by others. It is simply their *combination into a system*, which is offered for the consideration of cultivators of this most useful esculent. The conviction is deep in the mind of the writer, that it is the only true system; that it will insure the largest crops of healthy, large-sized roots, and that a failure can hardly occur, either from late frosts, wet or dry seasons, or from disease. He believes that in plants, as in animals, disease is not the result of an innate, inherent tendency to decay (save by old age), but of *vicious culture and nutrition*. Should it be likely to meet with general acceptance, it is his intention to prepare a more detailed and elaborate statement, giving weight of seed used, quantity per acre, etc., as well as trials of large, medium, and small, whole Potatoes, at a future day.

On closing, he would call attention to the valuable new variety the Early Goodrich, (an illustration of which we give on page 370], a seedling of the Cuzco, which was described in a former number by D. S. Heffron. Esq. It is certainly the greast acquisition for many years past; perfectly hardy and healthy, highly productive, of excellent quality and as good a keeper as any winter variety. Its brother, the Harrison, is also of the same character, except that it matures later. Should another years' experience confirm its present promises, we may set down these twin-brothers as the best types of their race.

The Gardener's Monthly.

PHILADELPHIA, DECEMBER, 1865.

☞ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box Philadelphia."

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CONSERVATORY AT ENVILLE PARK, THE SEAT OF THE EARL OF STAMFORD IN WARWICKSHIRE, ENGLAND.

[*See Frontispiece.*]

Few persons who have not travelled in Europe, can imagine even by what they read, the magnificent scale on which Gardening is carried on there. We have thought it would better convey to our readers some idea of this grandeur, by giving them, as a frontispiece for our volume for 1865, an illustration of the beautiful building for containing plants in bloom, and others to be grown in the open ground of the conservatory, for which, and the following account, we are indebted to that excellent English magazine, the *Journal of Horticulture and Cottage Gardener:*

"The Conservatory was designed and erected by the late firm of Messrs. Gray and Ormson. It is in length 160 feet, and in breadth 79 feet. It stands upon a raised platform, some 20 feet above the level of the upper pool, and has a broad gravel terrace all round it, graced with fine pyramidal plants of Sweet Bay in tubs. These fine Bays are placed under protection in winter. The stoke-holes are reached from an opening, close to the steps, in the sloping bank on the north side of the terrace. Three boilers are used, and 5000 feet of four-inch piping.

On the lawn at the base of this slope, are placed six raised beds or baskets, of an hexagonal or octagonal shape, their sides covered with bark, and these baskets were all planted in the mixed style; all attempts at artistic arrangement being thoroughly concealed. They afford a relief after looking at the hundreds of flower-beds, so neat and trim that not a twig or a blossom seemed as if it could get out of place. We were reminded of what we have sometimes noticed in nosegay making—one person will take a long time to produce a desired effect, and after all the composition will be as stiff as a poker in its symmetry; whilst a young lady will from her own border cull a sprig here and another there, place them in position as she goes along, without making great pretensions to aiming at taste, and yet eight out of ten people would prefer the nosegay thus huddled together, just because there was more of the natural than the artistic about it.

On the inside of the Conservatory there is a wide pathway or road down the center, and narrower ones along the sides; and by the sides of these paths the pipes for heating are placed in chambers, with open iron-grating work over them. The main supports of the building are iron, and the main columns are hollow, to act as drain pipes from the roof. All the rest for the reception of the glass, except the domes, is formed of wood. The ventilation is ample, and the tops of the domes are easily opened and shut by a wire rope concealed among the climbers round the pillars. About the middle of one end are two fine tubs of Araucaria excelsa, and to balance these on the other side are two fine plants of Yucca, or Dracœna, with good clear stems and large heads of green leaves. Camellias, Azaleas, Oranges, Fuchsias, etc., are included in the present furnishing, and the prominent creepers and climbers dangle in profusion from the roof, such as Tecomas, Acacias, Passifloras, and Tacsonia mollissima, etc.

The smoke from the furnaces of this Conservatory is conducted underground to an elegant tower at the north-east corner of the museum, and at a short distance from this museum is Lady Stamford's Dove-house, where an interesting collection is kept.

From the middle of the terrace on the south front of the Conservatory a walk, with flower-beds on each side, leads up to the open lawn, on which are some wonderful Lime trees. This walk if it had gone straight on, would have led to a fine Rhododendron close to the mansion. At the center of this walk there is a beautiful basin and fountain with fine specimens of pyramidal Sweet Bays set round in tubs on the gravel. The basin is deep, but to prevent waterfowl from getting in and possibly not getting out, strong wire-netting is placed across some 15 inches or so below the surface of the water.

From the south of the Conservatory a fine peep is obtained of the top of the museum, and the elegant smoke tower, surrounded with Ivy, and banked up with huge banks of evergreens; and between the museum and the fine Lime tree, the eye passes far beyond the dressed grounds to the arched gates that lead to the drive in the woods, that leads onward to the more elevated sheep-walks."

THE SCIENCE OF POMOLOGY.

Science is understood to be knowledge founded on indisputable facts. A Horticultural Committee going the rounds of an examination of fruits, must present a queer sight to a looker-on who judges of Pomological 'Science' by the above definition. A new seedling, perhaps it may be, is presented for an opinion. The enquiry is not how does it differ from any other known variety, or what are its merits over any other kind, but effort is made to be satisfied that it is really a 'seedling,' then it is assumed that it must necessarily be distinct from any old kind, and if it is of tolerably good size, color, or flavor, it receives a certificate as a "valuable new fruit," and takes its place immediately as one which "every one must have."

This is all wrong. It has become an intolerable evil,—and one crying to the leaders of the press for vengeance. For our part, unless some means can be found to abate this seedling nuisance, we shall vote Pomology and pomologists humbugs of the "first water," whatever kind of humbug this may be. They must abandon their pedantic title of 'Pomologists,' and descend to the common distinction of mere "fruit men."

It is, as we said, rare fun to an outsider to see a Committee go round. "That is a splendid Baldwin," says one member. "Baldwin," ejaculates No. 2, "that's no Baldwin: that's a Pennock." "Not large enough," says 3, "nor deep enough in the eye: it is Tompkins County King." This is a rather ridiculous example,—and we put it thus strongly, to ask even the 'Pomologist,' who would laugh at our absurdity, if he could undertake to write down, without the fruit before him, the chief points which mark the distinctive characters of the very common fruits we have named? Possibly —but most likely not—and if not, on what does Pomology base its claim to be a Science?

A Botanist will tell you on the instant in what consists the difference between a Strawberry, a Raspberry, and a Blackberry,—what are the characters that mark *Pyrus malus*, and what *Pyrus communis*. Why cannot some one who lays claim to Pomological consequence, or some Pomological Society, do as much for us with fruits. The trouble with societies is that they are likely to overlook the fact that it is of vast labor, and one falling on a few chief members, which becomes too onerous to be borne. The only way we see by which it can be accomplished is to pay handsomely the proper persons for doing it well.

Until something of the sort is done, we shall all of us be continually falling into the most ludicrous errors, and committing the most ridiculous actions.

The following is the latest 'joke,' and is from *Hovey's Magazine:*

"RUSSELL'S PROLIFIC AND BUFFALO STRAWBERRIES.—Our Russell's Prolific and Buffalo vines, standing side by side, enable us to say, without any hesitation, that they are both one and the same sort, and that the two are identical with *McAvoy's Superior*, well known years ago. That such a triple mistake should be made at this late day, seems most remarkable."

We have not grown McAvoy's Superior for many years, nor the Buffalo at all; but as far as our memory, in the absence of any better pomological 'science,' serves us, we think Mr. Hovey's observations most probably correct; which would seem "most remarkable" after these kinds have passed through so many distinguished hands, if 'Pomology' were on any regularly established system; but until it is, we much fear our friend of the *Magazine* and all of us are destined to witness again things quite as 'remarkable.'

HEAT AND MOISTURE IN PLANT-HOUSES.

Old writers used to dwell emphatically on the necessity of well ventilated houses. "Give air on all occasions," was the invariable advice after "water regularly."

Modern plant-growers have rather ignored this rule. They say as the heated air ascends, cold air must rush in from somewhere to take its place, which of itself furnishes a continual ventilation. Hence little attention is given to "putting on air," as opening ventilators is called, to what was the rule years ago.

Besides this, houses are made much closer than they need to be. The fixed-roof system favors this. We have seen houses so closely glazed that the moisture being so closely confined, froze on the glass like snow, to a quarter of an inch in depth, which, with the first sun of the morning, fell off, and nearly destroyed many of the choicest plants. We are satisfied this confinement of moisture is a great injury. We have been deceived by an improper term. Air may come in without ventilation, but moisture will not go out,—hence, if we change "putting on air" for *letting out moisture*, we get a better idea of what ought to be done.

It has been often remarked in our pages, that plants will not grow in sunk houses with any thing like the vigor and rapidity they do in houses built on the level land. This is on account of the extra moisture of such houses. Few persons have the

remotest idea of the extra amount of fuel necessary to heat a house beyond what the same size house with a dry atmosphere requires. We have frequently pointed out as one of the advantages of flues over hot-water pipes, that so much heat is absorbed by the water, which is entirely lost to the house, that on the score of economy of fuel, the flue has decidedly the advantage. The same law holds good with a dry atmosphere as against a moist one. "It is a curious fact," says Dr. Wood, (see page 295, this volume), "that if you take a pound of water at 60°, and a pound of lead at 60°, and heat them to 120°, it will take twice as much fuel to bring the water up to that temperature than it will the lead." Air is a much worse conductor than lead, so that moist air against dry air would show a greater demand for fuel than even lead; so that, as a question of economy of fuel, moist air figures badly in the account. On the growth of plants, moreover, a regularly moist atmosphere has a baneful influence, and for this reason: all the food of plants is taken up in a liquid state. In fact it is imbibed by the roots with the water into the plant's system. It circulates through the plant to the leaves, where the moisture evaporates away, leaving the solid matter to be added to the plant's system; as fast as it evaporates more is drawn in, and by this means continual matter for growth is being added. If there is no evaporation, nothing can be drawn into the plant's system: it cannot grow. It remains in a state of rest, just as if in a Wardian case. Evaporation cannot go on properly in a continued and regular moist atmosphere,—hence the opening of ventilators to admit of moisture escaping, and with it the exhalations of the plants, (for we may take it for granted that moisture, after it once passes through a plant's system, loses some of its value as truly as air does after passing through the lungs of an animal), should be considered a point of good gardening with all thorough-going men. There may seem to be a loss of heat,—but the dried state of the air that follows will require less fuel for the same temperature, so that the loss is equalled by a gain in another way.

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.

Color of Pears.—A correspondent from New York writes: "While on a visit to the Central Park, I found myself in the midst of a throng who were assembled to view the latest sensation,—a wedding in the clouds, by ballooning. I was astonished to note in the newly-made husband, as he marched forth towards the "bridal car," our old acquaintance, Prof. Boynton, of Syracuse, who you will remember as entertaining us some years ago with a speech before our Pomological meeting in Philadelphia, accounting for how he made Pears shine, by using *silicates* liberally in the soil. This cloud marriage was a complete 'sell.' They didn't marry in the air, and the crowd did some grumbling; and it moves me to enquire whether there was any 'sell' in the Pear case. What has become of this *silicate* question?" Who can tell?

Hot-water Tanks—*C. E. D., Pawtucket, R. I.*—I have just built a small Greenhouse, 30 feet long by 14 wide, with a small potting room on the back 6 feet wide, running the whole length. In looking around for the best method of heating it, I found in your April, 1861, number, a way I thought might do it. I bought one of Weathered & Cherevoy's boilers, and had a wooden tank made, 15 inches wide, 6 inches high, and a dividing board in the middle, exactly like the cut in the *Monthly*.

The boiler works first-rate, but am very much troubled with the steam that rises (the tank being open): it is so dense that I cannot see across the room. What shall I do to stop it? Can I get heat enough to warm such a house in the winter from such a tank? What should be the temperature of a Greenhouse at night, and also in the day time.

[Tanks are usually made for imparting *bottom* heat, and are not built for heating the atmosphere. Besides, they should always be covered. Less fire will make less steam, but in that case your atmosphere will probably be too cold. Under the circumcumstances, the best thing for you to do will be to have a course of iron hot-water pipe connected with your wooden tank, to heat the atmosphere by. So much more water to be heated, and so much better a chance for the heat to pass off to the air, will keep the water from getting so hot as to produce the ill effects you describe. Temp. 55° to 65°.]

Sowing Forest Tree Seeds—*C. D. S., Mendota, Ill.*—Is there any work giving full directions for *gathering*, *saving*, and planting the seeds of our forest trees? Our prairie farmers are much in need of such information. Can you not enlighten us through the pages of the *Monthly*. I know several that have planted the seeds of the Soft Maple, and had them burn down as fast as they come up.

[Tree seeds that have pulp should be washed *at once* on gathering, and dried in the shade gradually. Pulpless seeds dried gradually also. Sun-dried seeds are generally worthless, especially those of a dark color. The sooner seeds can be got in the ground the better. They should not be sown any deeper than is necessary to keep them from the light, nor so near the air as to get dry,—*moisture*, *air*, and *darkness* are the three essentials for successful raising of tree seeds. Seeds that are usually spring sown, and are found to "damp off," should be sown very early, so that the young wood may get hard before the hot weather comes.

The Soft Maple will not keep more than a few weeks good enough to grow. It should be sown as soon as ripe in June. Not sown deep,—on the surface, and slightly covered with sand is the best way. A long article would tell a longer and perhaps clearer story than this; but this is the pith of this whole matter.]

Standard Pear Early Bearing—Questions for Swift.—*J. H. C., Chillicothe, O.*, says:

"Several articles in late numbers of the *Monthly* on Pear culture have been of unusual interest; but a few questions will surely rise in the minds of many readers. In the instances given by "Swift," in the last number, how were those standards treated, that a Seckel, 6 feet high, should bear in five years, and a Bartlett have fifty pears in *five* years from time of grafting, etc.?

Then another question, if answered, would be interesting to thousands of young planters. What is the average age of the Pear tree when it begins to bear as a standard. Of course the kinds differ. Please, Mr. Editor, give us a list of the commonest kinds, beginning with the earliest bearer."

[The relative earliness of coming into bearing of different varieties of Pear on Standards is a very interesting question. In this section the Bartlett, Brandywine, and Belle Lucrative, are early bearers. The Lawrence also comes in soon. We should like to hear from those who have large orchards of *standard* Pears, as to their comparative merits in this respect.]

Fruit Crops at Palisades, N. Y.—We recently gave an extract from a letter written in early summer from a correspondent at this place, who was somewhat despondent at his prospects. It is pleasant to have this encouraging account of the result:

"I wish you could see the Pear trees in bearing, most of which did a great deal better than I expected, the yield being some over 400 baskets against 250 baskets of last years, and the difference would have been much more if the Diel, which were nicely loaded, had not partly lost their leaves early, and on account of that cracked badly.

Of the later Pears the Doyenne d'Hiver and the Vicars are yet on the trees, and if you should come to New York, I wish you could spare the time to come and look at them. The Vicars that bear, some 6 feet high and 4 feet wide at the base, have from 60 to 100 pears each, of good size and fine skin. I do not believe they could bear many more. Duchesse were fine, and Belle Lucrative loaded.

Our Isabellas had a fine ripe crop; Rebeccas did very well, and Rogers No. 1 sustain their reputation; Catawba and Diana all rotted and Delaware was quite indifferent."

Delaware Cuttings—*C. D. S., Mendota, Ill.*—I wish to know when to cut, how to save, and how to manage the Delaware cuttings, to grow them successfully either with or without bottom heat.

[Delaware Grape cuttings strike freely when taken off and planted in fall or early winter. When they cannot be so planted, they do pretty well by being cut into planting lengths some weeks before planting in spring, and kept in moist moss or sand, until wanted for use.]

Hemlock Seeds—*J. B., Battle Creek, Mich.*—I have collected a quantity of Hemlock seeds from one of my trees, and will feel obliged to you for directions for planting them, and also how to manage seedlings the first year.

[Hemlock seed does very well sown in boxes, and set in a cold frame in February, covering the seed thinly, and keeping it regularly moist but not wet.]

Nursery Valuations.—*Mr. D. B. Williams, South Haven, Mich.*, writes:

"Our Assessor classes my Nursery as personal property, and has assessed it accordingly. Is this right? Should it be assessed as personal property any more than a field of Corn, a hill of Potatoes or a Cabbage patch?"

[We cannot of course answer legal questions, but may say, that if the Assessor assessed the *trees* as personal property, we suppose he would be right. The *land* on which the trees grow of course is real estate. We have never known any trouble with trees. Greenhouses often raise questions of this kind. We once knew a man who rented land for a florist's purposes. He wanted the landlord to insert a clause in the lease that he could take away

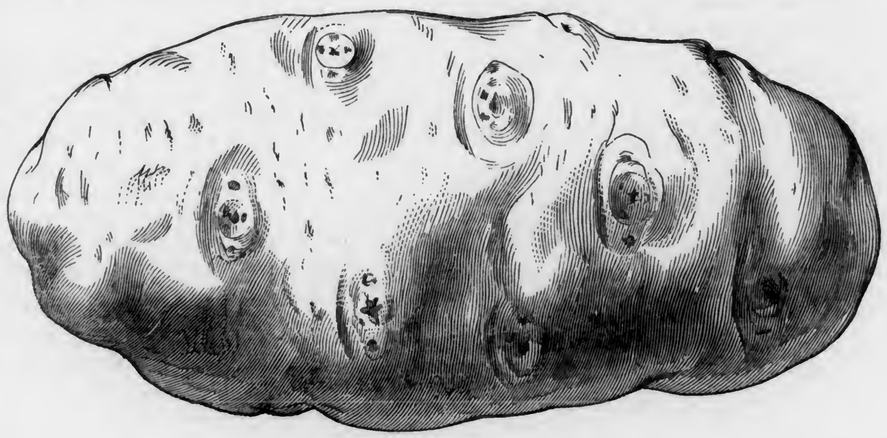
his greenhouses at the end of the term. The landlord stated it was unnecessary as the law considered a florist's greenhouses as part of his stock or implements of trade, and the landlord could have no claim to them, and the law seemed to so recognize it, for during the proprietorship of the same owner no increase was made to the assessment, although many greenhouses were built. Subsequently the Florist bought the ground; after that every new greenhouse he built was classed as an "improvement" of his real estate, and he was taxed accordingly. It is difficult to decide these cases without "going to law." Whether it is worth this, parties must judge for themselves.]

Poppy Seed—*J. B., Battle Creek, Mich.*—I have planted the Oriental Poppy seed by the thousand, some as soon as they ripened,—some in the fall, and some the next spring,—but have never succeeded in making any grow. What is the difficulty?

[We have never heard of any difficulty in sprouting Poppy seed. Perhaps sown too deep.]

Hemlock Cuttings—*Same.*—Can the Hemlock be grown from cuttings? if so, please give directions how to do it.

[Cuttings of the *last years wood*, strong ones being selected, grow very well taken off now, put in boxes of sand, kept cool for a few weeks, then, towards spring, started in a bottom heat.]



EARLY GOODRICH POTATO.

—The above engraving was prepared to accompany the article on "Potato Culture," by Mr. A. W. Harrison, but having been delayed by the artist we could not insert it in that department, and not doubting but that our readers will be highly gratified by handsome appearance, we insert it here.

Names of Plants—"*Out West*," *Naperville, Ill.*—1 Amelanchier botryapium. 1 Spiræa sorbifolia—as near as we can make out from very small and bad leaves.

J. H. S.—Yours is the seed vessel of Ptelia trifoliata.

Grafting Walnut Trees—*J. H. C., Chillicothe, O.*—There is a Black Walnut here that is very remarkable for the size and quality of the nut. I have repeatedly tried to graft, and once tried to bud, but failed each time. Is there any thing peculiar about the Walnut—graft or bud? If you desire, I will send grafts to you at the proper season.

[Grafting is so entirely an *art* that it can be taught only by practice, except in the most general way. Almost every kind of tree has some little peculiarity to be learned by practice before it can be successfully grafted. All we can say is that Walnuts can be grafted; and no doubt if our correspondent tries again he will succeed. Try at a few days interval each time, and by different modes of grafting,—also try with fresh grafts, or with some that have been preserved a short time in soil, so as to let the stock get a little ahead. We should like to try a few grafts.]

Books, Catalogues, &c.

We are indebted to Mr. B. P. Johnson, Secretary of the New York State Agricultural Society, for the last volume of "Proceedings," just issued. The work does honor to the Secretary's judgment, is a credit to the society which adopts, and the State which aids in so useful a work, may well be proud of the achievment.

From the same gentleman we have the Society's premium essay on "Grape Culture," by the Hon. Goldsmith Denniston. It is devoted chiefly to a history of Grape culture about Hammondsport, which, under the excellent management and superior judgment of Mr. Weber, has become quite a profitable staple production of that part of New York State.

West Virginia: *Its Farms and Forests, Mines and Oil Wells, with a glimpse at its Scenery, a photograph of its Population, and an exhibit of its Industrial Statistics.* By J. R. Dodge, of the U. S. Department of Agriculture. Published by J. B. Lippincott & Co., Philadelphia.

A very useful work in reference to a part of our country now occupying much public attention. One third of the work is devoted to Petroleum. We should have been glad if the Agricultural and Horticultural interests of the State had received a little better attention from our author; and we say this without detracting from the merits of what he has given us. We are sure there is room yet for another work on the resources of this rising State.

New and Rare Plants.

New American Verbenas.—I to-day send you three or four Verbena flowers, as types of six varieties that I have just purchased of Dexter Snow, Chicopee Mass., for $100 for the stock. They will likely arrive in such a dilapidated state that you will not be able to judge of their merits; but I can assure you that they are far in advance of any of the Italian or other striped varieties yet introduced—being fine bedders, besides being all highly fragrant.

Mr. Snow has been hybridizing the Verbena for the last 15 years, and has raised many fine seedlings, but the above is the first substantial reward for his labors; and the first time, I believe, in this country, that any thing worth while has been paid for Native Seedlings.

It is high time that we should begin to appreciate more home introductions. In my importations for England, for the last six or seven years, at least one-half I have annually to discard *before* sending out; and quite a number of those I do send out fail to stand the test of a second season. In fact, all our leading varieties of Verbenas and Petunias now generally grown here, are American Seedlings, although we must acknowledge them as the progeny of the best English varieties."—Peter Henderson, *Jersey City, N. J.*

[They were so dried we cannot tell any thing about them. We may say, however, they will be poor indeed if no better than the Italian Verbenas sent out last year.—Ed.]

Azalea Bouquet de Flore.—This hybrid Azalea is unquestionably a magnificent plant, that will reign as queen among its compeers, of which none as yet known to us are able to dispute its preeminence. Its innumerable and brilliant tricolored flowers, in which white, bright rose, and golden yellow combine their opposite yet harmonious tints, arranged in large bouquets, and its beautiful luxuriant foliage (the reticulated leaves are of a reddish-brown), produce a charming effect among clumps of other Azaleas, or alone, or planted in groups. It thrives well in the open air. It was discovered among the many seedlings raised by our Editor, who, after having well tested its merits and qualities, now presents it to his subscribers.—*Gardener's Weekly.*

Lobelia Snowflake.—As a bedding Lobelia, it stands unrivalled. The plant is of dwarf compact habit; the flowers are large, perfectly even, and of the purest white. The stock comes perfectly true from seed.

New Double Violet—*Reine des Violettes.*—The individual flowers are as large as, and much the form of, the large-flowering double-blossomed Cherry; color white, spotted with violet, deliciously fragrant, perfuming the air for a long distance around: it has also the peculiar advantage of blooming in the autumn, when the flowers are larger and of a purer white than in the spring. For conservatory purposes, it will be found well worthy of its name; the footstalks are long, being 4 to 5 inches in length, rendering it a most useful kind for cutting for bouquets

Hippeastrum pyrrochroum—*Flame-colored Hippeastrum* or *Amaryllis.*—This charming plant

was discovered in the country near the Amazon River (Para, Brazil), and sent over recently by that zealous collector, M. Baraquin. The flowers are of a bright flesh color, deepening into that of red-lead. M. Verschaffelt has had several in full blossom during the past July (1864), and their effect caused them to be pronounced very ornamental to the greenhouse. This plant may also be advantageously applied to the purpose of artificially fecundating other species, or those magnificent hybrids of its kind we see shown at so many exhibitions, especially at Ghent. It is extremely probable that by this means new colors might be obtained. The treatment of this plant should be the same as that of Hippeastrums generally.

VERONICA MADAME JACOTOT.—In the way of V. decussata. This promises to form a good companion to the well-known V. Andersoni, which this warm autumn has induced to flower in unusual profusion in open borders. In pots, however, these Veronicas have a highly ornamental appearance, and well deserve to be large cultivated for the decoration of cool conservatories and greenhouses late in the season.

NEW HELIOTROPE—*The Standard.*—This is the finest Heliotrope ever raised, having umbels of immense size, extremely dark, with lilac throat; for pot culture it is a spledid variety, being vey compact and an abundant bloomer.

New and Rare Fruits.

GRAPES FROM LANSINGBURGH, N. Y,—A correspondent says: "I have sent you this day, by Express, pre-paid, a bunch of Grapes, and would like to have your opinion through the *Gardener's Monthly*, as to its quality. From what I have seen of it, I consider it better than *that famous Grape the Iona.*"

[The little box was handed to us by the Express, with the demand for 55 cents charges. Unless our correspondents will attend to our suggestion, to mark their boxes "*paid through*," or give us some better guide, we fear the Express Companies will continue to "ask for all they can get."

So many fruits got spoiled by the time they reach us, that, if we were sure this one was all right, we should readily have "invested" in the extra Express profits, on the faith of our friends good description of it. The Express Co. finding the 'mistake' have since given us the box—contents rotten.—ED.]

HEAVY PEARS.—I saw a very flattering notice in the *Monthly* of some Duchesse Pears, weighing 12 ounces each. I send you one Duchess 19½ ozs., one 17 ozs., one Beurre d'Anjou 18 ozs., one Beurre Clairgeau 15 ozs. Give them such notice as their merits entitle them to.—T. G. YEOMANS, *Walworth, N. Y.*

[These were remarably fine specimens. One great peculiarity was their weight. The Duchesse were little larger than those sent us by Mr. Akers, and yet so much heavier. There was also a peculiar muskiness, very similar to the Bartlett, that we never noticed in Duchesse before. We have eaten fruit of the Duchesse d'Angoulême almost annually for twenty years, but never one so truly excellent as this specimen. The others were also superior. Mr. Yeomans has long been an ardent advocate and very successful cultivator of the dwarf Pear, and these fruits do him more than justice.—ED.)

AMERICAN POUND PEACH.—A correspondent of the London *Gardener's Chronicle*, from New Zealand says:

"Most of the Peach trees were very heavily laden with fruit, no unusual thing in this country, very different from the mother country, where much labor is bestowed on their cultivation. The American Pound Peach found its way here from Sydney, and we saw about half dozen Peaches on a young tree, justifying the name. We have in the colonies almost as many names for Peaches as we have for Apples, which causes a good deal of confusion.

NEW ENGLISH PEACHES RAISED BY MR. RIVERS.—The first is

EARLY ALFRED—Raised from the seed of Hunt's Tawny Nectarine! Singular fact! It is a Peach of the ordinary size, rather larger than otherwise, and marked with a deep suture that is rather higher on one side than the other. The skin is remarkably tender, pale straw-colored on the shaded side, and somewhat mottled with bright carmine on the side next the sun. The flesh is white, with the jelly-like transparency of that of a Pine Apple, perfectly melting, richly flavored and vinous, having an exquisite briskness that excites the salivary glands, and cleans instead of clogging the palate. This delicious Peach ripens early in August.

THE DAGMAR is another of those exquisitely flavored Peaches, not quite so large as the Early Alfred. It is the second generation from the Early Albert, another excellent variety raised by Mr. Rivers. The fruit is round, and marked with a shallow suture, which is deepest at the apex. The skin is very tender, more than usually downy, of a pale straw color, almost entirely covered with minute crimson dots, so dense that they almost form a solid mass of color; but here and there small patches of the yellow ground color show through and give the appearance as if the fruit were mottled with yellow. Flesh white, with that gelatinous appearance that the whole of these new sorts possess; it is so tender as to melt entirely away in the mouth, and the flavor is very rich and vinous. This ripens about the 10th of August.

ALEXANDRA NOBLESSE is a noble Peach, and a great gain in many ways, for it is of the largest size, and has all the peculiar richness of flavor of the old Noblesse; but, unlike that variety, it has glands on the leaves, and is never subject to mildew. It is a remarkable fact, which we should like to have explained on physiological principles, that almost all the Peaches and Nectarines that have glandless leaves are subject to mildew.

This excellent variety was raised from the old Noblesse, and, as we have already said, is of the largest size, round, and marked with a deep suture. The skin is covered with a rough down, and is quite pale without any trace of color upon it. The flesh is white, even to the stone, and is very melting, juicy, richly flavored and vinous. A very handsome and excellent Peach, which must take the place of the old Noblesse. It ripens early in August.—*Cottage Gardener.*

Domestic Intelligence.

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA.—*Concluded from page* 348.—It will be seen by these names that the Society at once attracted to it the brightest intellects in the country.

Under the fostering care of these gentlemen, the Academy increased in usefulness. Lectures were given on Chemistry, Ichthyology and Mineralogy, by gentlemen well versed in these branches, and thus the public became acquainted with the existence and objects of the Association. In 1816 a constitution was adopted; the following year an act of incorporation was procured from the Legislature. The same year the Academy commenced the publication of a journal, the first number being issued May 20th, 1817. An exchange of journals with other societies was also begun, and has been continued to the present time. At the close of 1820, the Society numbered over one hundred members, and one hundred and ninety correspondents. In 1826, the Society purchased a lot of ground and building at the S. E. corner of Twelfth and Sansom streets. It had been used as a place of worship by Swedenborgians. The building was at once altered to suit the purposes of the Society, and the first meeting was held there May 9th, 1826. In 1828, it was decided to open the collection, which was then very fine, to the public. Tuesdays and Fridays were set apart for that purpose. This course has been pursued to the present time. But the new Hall was soon found too contracted. In 1839, the lot, northwest corner of Broad and Sansom streets, was purchased, and in 1840 the building was ready for the Society. The building has been enlarged several times to meet the increasing demands for space. It is 45 feet on Broad street, by 115 feet on Sansom street. There is no pretence to architectural beauty in the structure, but it is fire-proof throughout. It is divided into a basement below and two lofty stories above. The greater part of the basement is used for the library, which contains over 25,000 volumes upon scientific subjects. The microscopic collection of the biological department is arranged in the basement. The upper saloons are set apart for the display of the collection, and it is evident, from the crowded condition of the cases and rooms, that a new building of at least double the capacity of the present structure is imperatively demanded. Philadelphians should feel a pride in this museum—the finest in the United States—and see to it that it is properly displayed in a building better adapted to the purpose than the one now in use.

The immense collection belonging to the Academy is arranged under eighteen different heads: mammalogy, ornithology, ichthyology, herpetology, conchology, entomology, myriapods, and arachnidans, annelidans, zoophytes, botany, ethnology, comparative anatomy, mineralogy, geology, palæontology, chemical and philosophical apparatus and library. These different departments have received the unremitting attention of the members. As in the early days of the Society, it must still rely upon the individual exertions of the members for the arranging and keeping in order the vast number of specimens. There is no fund for curators or librarians. Strangers visiting the Academy for the purpose of study, are surprised to learn that no one is regularly delegated to assist students in their pursuit after knowledge. The members who may be present are always ready to assist those who call; but they are anxious to be placed in a position to make the institution worthy of its wide-spread fame. It has no rival in the United States; it may

be equalled by the collections in Europe. Much of its benefits are lost through the inability to provide properly for students. Thus far, as we have said, the entire work of management devolves upon the members, whose ordinary vocations permit them to devote to it only the leisure moments which most men spend in amusements. The immense labor required for this work is shown by the fact that no regular systematic catalogue has ever been prepared by the Academy. "A Hand-book to the Museum," has been prepared by Dr. Slack, but it does not profess to do more than refer to the different classes, without reference to the specimens in detail.

Mr. John Cassin, one of the members, who has for years been arranging the collection of birds, has undertaken to make a catalogue of this one department. He estimates that at least five years of constant labor during the day will be required for the work. The collection of birds, which has been most admirably classified and arranged by Mr. Cassin, is the finest in the world. There is not one less than 31,000 specimens, and of these about 27,000 are displayed in cases. Of very many genera, all the species known are exhibited. In 1837 the Academy had but 1000 specimens, but the collection rapidly increased after that year. In September, 1846, Dr. T. B. Wilson deposited more than 12,000 specimens, a collection made in Paris by the Prince of Essling, and purchased by Dr. W. He not only purchased the collection, but enlarged the Academy, at his private expense, to accommodate it. Dr. W. also presented a collection of Australian birds, 2000 in number, which he purchased in England. The collection was originally made by Mr. John Gould, the ornithologist, and was used by him in in preparing the plates for his splendid work, "The Birds of Australia." M. Boucier, an ornithologist of Lyons, presented in 1846, a collection of 1000 Parrots, conirostral (with thick and curved beaks) birds. Nearly 1000 specimens, collected in the interior of India, are also deposited in the cases. There are numerous specimens, the gifts of members and strangers. A month would be required to inspect them with a view of even a general notice. In connection with the ornithological cabinet is a collection of bird's eggs and nests. In this department Dr. Wilson was also a liberal contributor. In fact, next to Mr. Maclure, Dr. Wilson was the most liberal of all the friends of the Academy.

The collection of eggs contains over 5000 specimens of 1526 species, and 200 nests. This collection of eggs is not surpassed by any in Europe. One of the curiosities of the display is the edible bird's nest from China, a favorite article of food with the Chinese. In another department (Mammalia) is a companion specimen, the edible dog, eaten by the inhabitants of the Celestial Empire.

The department devoted to fishes is unusually large and valuable. The major part of the collection has an interesting history connected with it. The specimens, several thousand in number, belonged to Charles Lucien Bonaparte, and are described in his "Fauna Italica. After his troubles in Rome, Charles went to England, where he sold his collection to a brother of Dr. Wilson, fearing that the Pope would seize it with the rest of his property for confiscation. It was so seized, but through the exertions of Mr. Cass, then our Minister to Rome, the collection was released and sent to Philadelphia. The skeleton of the whale captured in the Delaware River, in 1861, occupies a prominent position in the Museum. Dr. Morton's collection crania, of about 1200 skulls, are a somewhat ghastly exhibition, and are among the most valuable of the collection in the Academy. These are arranged to exhibit the formation of the heads of the inhabitants of all countries, and the collection contains specimens of the skulls of the European races, with the Egyptian, Hindu, Lapland, Chinese, African, Malay, Roman, Greek, Circassian, Cherokee and other Indians, Aztec and Copt. The entire collection contains twenty-two varieties of the Caucasian race; two varieties of the Mongolian; thirteen of the Malay; sixty-nine of the Aboriginal; twenty-one of the Negro, and eight of mixed races; and skulls of lunatics and idiots of several races.

The Academy also rejoices in several specimens of mummies. There are four human mummies—one Egyptian and three Peruvian. The Egyptian mummy is enclosed in its original sarcophagus. It came from the catacombs of Thebes. There is also a number of mummied animals, presented by Mr Gliddon. Thus, through every department, we might select particular objects, but our space is too limited. Sufficient has been said to show that in Philadelphia there is an institution which is an honor to Science, and of which all her lovers should feel proud. Let us trust that the publicity now given to the institution will stimulate those who are able, and who desire to see the Sciences more cultivated, to raise a fund sufficient to erect a building of a capacity equal to the collection to be displayed. The original founders and their successors have done well. May their good work be continued. May a generous people return their feelings of obligation in a substantial form.

How Dr. Hull grows his Grapes.—Dr. Hull afterwards furnished his method of preparing his ground for and the cultivation of the Grape on the bluffs of his farm, as follows:

"I grow my Grapes exclusively on side hill land, which is thrown into terraces twelve to eighteen feet wide. I commence near the top of the hill. First mark the upper side with a spade horizontally around the hill with a slight depression to the points selected for drainage. Mark a parallel line as low down the hill as the first terrace is to extend; then with a two-horse, cast-steel, side hill plow, plow the earth down hill until the upper hill side of the terrace is eighteen inches lowest. The perpendicular side of the terrace should be kept so by the use of a one-horse plow and spade. Now let us suppose the perpendicular bank at the upper side of the terrace to be six feet high. With a spade or sharp hoe, commencing back from the summit two feet, making a graded slope to the base, this earth will raise the upper side of the terrace about one foot, with top soil, still leaving the down hill edge about six inches highest: this will incline the water to the hill side, and effectually prevent washing. Continue terracing as above described, until you reach the base of the hill. Two men and a team will thoroughly prepare an acre of ground, as described, in from one to two weeks.

I set my vines in rows, six feet apart, and the the same distance in the rows; to each vine set three stakes—one at the vine and one on either side, two feet from the center stake. Thus each vine occupies four feet in the rows, leaving a space of two feet between the vines for pruning, the circulation of air, etc. The stakes should be six feet six inches high; to the top of these nail the ends of two laths, say three or four inches from the ground; incline these upwards, say three degrees, and nail to the outside stakes. On these slats you are to train two branches, one on each, to and up the outside stakes. These young branches, on reaching the top of the poles, may extend right and left on the continuous bar first described. In the fall, winter, or early spring, both of these canes are to be cut back,—one for fruit to ten eyes, more or less, according to the strength of the vines; the other to three or four eyes. To the center pole was attached the cane that bore fruit; this is cut clean away, and the cane with ten eyes is twisted and wound spirally around the center stake, and tied firmly to it. This is the cane that produces the fruit, and from its position is free from drip or shade from other parts of the vine. The spiral binding and twisting will cause the buds to break evenly, and its position secures full exposure of all its leaves. The cane cut to three or four eyes will push as many shoots as there are buds. Select the two strongest ones to train on the lower slats and up the outside stakes as before directed; both the pruning and training will be the same each year. On your fruit cane never grow two leaves where only one can be fully exposed; remember that large fruit and color depend on full development of the leaves, and that competition for sun and air will greatly lessen the value of your crop; hence it is that we recommend three stakes, with only one cane to each.

Clinton and other sorts which make small bunches of fruit, should, when the vine is capable of carrying more fruit than can be supplied by the true fruit-buds, have its lateral cut to three or more buds;—the eyes on the strong laterals may thus be taken advantage of to secure a full crop. In describing the first operation of training, it will be remembered that the two arms of the vine diverge right and left from the main stem, within three or four inches of the ground, and when desirable may easily be laid on the ground, and secured in that position by holding them in contact with the earth by the foot; with a hoe draw a little earth on them, to keep them down, and when you have completed the row turn a furrow of earth with a one-horse plow over them. In this manner they will winter safely, and may in the spring be raised by thrusting a fork under them and lifting them up."—*Report of Ill. Hort. Society, in P. Farmer.*

Foreign Intelligence.

Plants for Flowering in January.—We may expect from the stove—Eranthemum pulchellum and strictum, Poinsettia pulcherrima, Euphorbia jacquiniæflora, Justicia speciosa, Begonias nitida, igsignis, lucida, and some of the variegated kinds, as grandis and Marshalli, Torenia pulcherrima, Gardenia citriodora, Epiphyllums truncatum vars. magnificum, purpureum, salmoneum, cruentum, and violaceum, Thyrsacanthus rutilans, Ardisia crenulata for its red berries, and its white and yellow-berried varieties, Aphelandria aurantiaca, Hebeclinium atrorubens and ianthemum, Gesneria zebrina splendens, and G. cinnabarina splendens. From vineries—Camellias, Primulas, Cyclamens coum, Atkinsi persicum, vars., Coronilla glauca Daphne odorata rubra, and its sub-variety alba, Acacias hybrida, rotundifolia, oleifolia elegans, and

longiflora magnifica, and in addition, Snowdrops, Scilla brevifolia, and S. bifolia; last, but not least, Lillies of the Valley, brought into flower in a cool part of the stove, along with the two preceding, all on a shelf near the glass, and from the same a few Hyacinths, Narcissus, and Crocus, and a few pots of Tulips; nor must I omit Andromeda floribunda, and Laurustinus on short stems, that come from the vineries without any forcing.

In this month it is to be expected that one of the vineries will be thoroughly cleaned, and forcing commenced, so as to have Grapes in June. Such being the case, we introduce plants of the dwarf Rhododendrons, as caucasicum album, dauricum atrovirens, ciliatum, gemmiferum, varieties of Nobleanum, and other hybrids, nice dwarf plants well set with bloom-buds; common sweet-scented hardy Azalea, Kalmia glauca and latifolia, Deutzia gracilis, Diclytra spectabilis, Weigelia rosea, Sweet Briar, Roses, (assigning them the lightest and airiest situation), also Lilies of the Valley, Hyacinths, Tulips, Narcissus, Crocus, Scillas, and a few pots of tree and Neapolitan Violets. Plants of the old Hydrangea will bloom the earlier if afforded a little heat, and it is one of the best plants for rooms. To the above we may add some of the most forward Pelargoniums, Cinerarias, Calceolarias, a few Fuchsias, Salvia splendens, varieties of Azalea indica, especially amœna, and a few pots of Lilium lancifolium speciosum. A few Gloxinias and Achimenes may be potted and introduced into the stove, and also a few more bulbs to keep up a succession until those in the early vinery come in. If there is convenience, a bed of leaves or tan may be made in the early vinery, and this will be useful for the deciduous plants introduced for forcing, of which I find that I have omitted Prunus triloba flore pleno, Rhodora canadensis, standard and dwarf Ribes, and Lilacs, and the double-blossomed Peach; also Daphne cneorum and Berberis Darwinii, which are evergreens. It will also be of service for forwarding Begonia Evansiana, and others.—*C. Gardener.*

Forcing Roses.—It is difficult to select the six best Roses for forcing, there are so many of them; but, in addition to our favorite Baronne Prevost, we may name Paul Ricaut, Edward Jesse, Géant des Battailles, General Jacqueminot, Jules Margottin, and Madame Laffay. Of Chinese we would add Cramoise Supérieure, Mrs. Bosanquet, and Fabvier; and of Teas, Devoniensis, Niphetos, Safrano, and Gloire de Dijon.

The success in forcing depends more on management than on kinds, and the two great secrets in management are keeping the plants free of insects, and bringing them on very gradually: never giving them a high temperature, commencing about 45°, and gradually rising to 50° at night, and never more; though a rise of 10° to 15° more will be advisable in sunshine, and with plenty of air.—*Cottage Gardener.*

Dried Flowers in their Natural Colors.—These have for some time past appeared for sale in the shops. The mode in which the operation is effected is this:—A vessel with a movable cover is provided, and having removed the cover from it, a piece of metallic gauze of moderate fineness is fixed over it, and the cover replaced. A quantity of sand is then taken sufficient to fill the vessel, and passed through a sieve into an iron pot, where it is heated, with the addition of a small quantity of stearine, carefully stirred, so as to thoroughly mix the ingredients. The quantity of stearine to be added is at the rate of half a pound to one hundred pounds of sand. Care must be taken not to add too much, as it would sink to the bottom and injure the flowers. The vessel with its cover on, and the gauze beneath it, is then turned upside down, and the bottom being removed, the flowers to be operated upon are carefully placed on the gauze, and the sand gently poured in, so as to cover the flowers entirely, the leaves being thus prevented from touching each other. The vessel is then put in a hot place—such, for instance, as the top of a baker's over—where it is left for forty-eight hours. The flowers thus become dried, and they retain their natural colors. The vessel still remaining bottom upwards, the lid is taken off, and the sand runs away through the gauze, leaving the flowers uninjured.—*Journal of Society of Arts.*

Horticultural Notices.

PENN'A. HORTICULTURAL SOCIETY.

ANNUAL EXHIBITION.

We promised last month to give further details of the Annual Exhibition, and regret our brief space forbids more than a few notes. The plants exhibited were mostly of the well-known kinds. The *Allocasia metallica*, in Mrs. Catherwood's collection, was much admired, also a very fine plant of *Maranta regalis*. In Mr. Hibbert's (gardener to Fairman Rogers, Esq.) collection, the beautiful *Selaginella Cunninghamii* proved itself to be still the most striking of the whole family; his *Eucharis Amazonica* was beautifully in flower, and its fragrance was delightful,—it will make a good thing for cutting for bouquets in the 'stemming' process. *Cyanophyllum magnificum*, in the same collection, was the best specimen of this majestic leaf-plant we think we ever saw. In Mr. Baldwin's collection of Ferns, a *Lygodium scandens*, a native fern, was a beautiful object, and no doubt pleased those who think native ferns are neglected, and wanted a good argument why they ought not to be,—no exotic fern can excel it. In Mr. Baird's collection *Cissus porphyrophyllus* caught our eye, as, though not so pretty as the older C. discolor, still was showy enough to please all. There were many curious things in Mr. Dreer's collection worthy of note, but none more so to our mind than the perpetual or tree Carnation, *La Italien*. In the collection of the President, D. Rodney King, besides a good Cyanophyllum, was the curious *Papyrus versicolor*; a new *Coleus*; *Atropurpurea* was also here, but not near equal to C. Verschaffeltii. Mr. B. Bullock had *Panax fruticosa* in very fine style, among a choice lot of things,—but the rarest collection came from the nursery of R. Buist, the Committee awarding them a special premium of $10: among the most striking things we noticed a new Euonymus (*radicans*) from Japan; also *Osmanthus variegatus*, another beautiful Japanese evergreen, probably hardy; *Reneickia carnea variegata*, a sedgy variegated leaf, gracefully curving,—will make, probably, a good basket plant; *Hoya carnosa variegata*, a charming thing; *Platycerium grande*, a rare and improved form of the common Elks-horn fern; the curious *Dictyanthus pavonia* was also here in flower, and perhaps as interesting as any thing, our native *Goodyera pubescens*, or Rattle-snake Plantain, with its silvery-veined leaves. He also had the Tree Fern of New Zealand, Dicksonia antartica, and Cyanophyllum Assammica.

In Messrs. Mackenzies' collection the various forms of New Japan Pinks were much admired. Mr. Sherwood's varieties were not numerous, but very choice—particularly *Retinispora Lycopodiaca*, a fern-looking evergreen of very dwarf habit; he also had Thujopsis dolabrata variegata, in good condition; *Sciadopitys verticellata*, the largest fan Pine probably yet in the country; *Phyllocladus thyrsoides and Eleagnus hortensis variegata*, which perhaps will prove hardy; he had also a very nice specimen of the brilliant *Correa cardinalis*, and the bulb *Hœmanthus coccinea*, seldom seen in flower. Mr. Meehan had a collection of bedding Geraniums, amongst which *Lallah*, *Lanata*, and *Stella* were conspicuous.

It would take our whole number to give a full description of the meeting. We extract the following from the Committee's report. Speaking of the beautiful Island in the middle of the Hall, they say:

"The Island of the Muses was a great attraction of the exhibition, and its decorations were from the gardens of Mrs. G. W. Carpenter, Gen. Patterson, Messrs. Fairman Rogers, M. Newkirk, R. Buist, D. R. King and others. That old and welcome pioneer of our exhibitions was at its post, the Sago Palm, deposited by Mrs. G. W. Carpenter, was received with satisfaction by the society, and placed at the door to proclaim to the people of Philadelphia and its surroundings that the exhibition is now open,—long life to it and its possessor, long may they continue to be an ornament to the Society. A beautiful collection of plants, not in competition, was from the garden of David Fergusson, Laurel Hill. Among the features of the exhibition, although among the smallest, yet we might say the most rare, was deposited by Mrs. Scull: a small plant from the land of Palestine, called Anastatica hierochuntica, commonly named the Resurrection Plant or Rose of Jericho. Another rarity we have to report, growing almost at our own doors, a large lot of branches of the Phoradendron flavescens, or American Mistletoe, interesting from its antiquity and literary fame: millions have repeated its name and passed away, without ever knowing more of its history than it grew upon other trees; it was procured by our worthy President, D. R. King, from the State of Delaware. Now it has been introduced long may it continue to visit our exhibitions. The flower-stem of the Agave Americana, from the gardens of Mrs. Carpenter, Germantown, proved quite interesting.

There was a large and varied collection of plants from both the Torrid and Temperate Zones, all of them grown within a city with a population of nearly 750,000, making it evident that the gardeners among us are men possessing intelligence, skill, industry and perseverance, from the excellent health and beauty which their plants presented."

The Department of Bouquets, Designs and Cut Flowers was of surpassing excellence. No less than 47 premiums were awarded here.

The Vegetable Garden was ably represented by A. L. Felton, who seemed to have all the kinds in season named in "Burr's New Book," with about as many more; and by A. W. Harrison, the Potato Man! Among the varieties of Potatoes, the best bushel was carried off by *Early Goodrich*, *Cuzco* taking second best. The best collection had *twenty varieties*, from the Potato-man. The "best new

variety" was the *Harrison*, one of the Goodrich Seedlings. The best Tomatoes were the *Tilden*.

Of Fruits we cannot give even an outline. The report of the Committee occupies seven closely written pages. The First Premium Hot-house Grapes, 6 varieties, was gained by Baltimore, in the person of Mr. Fowler, gardener to John S. Hopkins, Esq.—they were Muscat of Alexandria, Santa Cruz, White Nice, Black Damask, Black Hamburg, Calabrian Raisin. It was a sore point to the famous Philadelphia growers thus to have a stranger come in and take away their colors. They must try again.

Mr. B. J. Leedom's gardener, Daniel Curtin, took the second; so we suppose he will stand at the head of the Philadelphia Grape-growers, for a time at least,—he had some good Lady Downes' Seedling. Mr. Samuel Greasley had the premium for 3 best Black Hamburgs,—they weighed 9 lbs.

Of the best Muscat of any variety, Mr. Fowler's Muscat of Alexandria came out first. Where are all the new rivals of this old kind? The best White of "any variety but a Muscat," was awarded to Samuel Greasley's White Frontignac. The best new variety to Mr. Gœhring.

Native Grapes were not out in force. Best collection Peter Raabe, 22 varieties, and all old kinds —Bland, Elsinburg, Isabella, Catawba, and so on. Harrisburg, to its credit for so young a scion of the Pomological tree, took second best, per Rev. J. Colder. The best Concords and the best Delawares, came from the bleak but fashionable region of Chestnut Hill. They were extra fine. Mr. Richard Norris promises to be as distinguished a fruit grower as a maker of Locomotives. The best Diana, Catawba, and Creveling, Mr. Merceron, of Catawissa obtained. Mr. Chas. P. Hayes, of Philadelphia, the best Isabellas.

Pears—Ellwanger & Barry, of Rochester, 180 varieties. Second, E. Satterthwait, Philadelphia, 120. These prizes were for the "most extensive collection." The best Sheldon, and best Lawrence, were awarded to Ellwanger & Barry. Best Beurré d'Anjou, to A. L. Pennock, of Philadelphia, and to E. Satterthwait, for best Duchesse d'Angoulême.

Apples—Best collection Ellwanger & Barry. Second best C. B. Ott, Pleasant Valley, Bucks Co., Pa.

Pine-apples—W. Joyce, gard to M. W. Baldwin.

Quinces—P. Mackenzie & Son.

Raspberries—Wm. Parry.

The Committee on Fruits close their long report by saying, they "congratulate the Society on the success of the display, and of the great improvement made in the cultivation of fruits, especially of the foreign Grape,—the display in this department being probably the finest ever made by this Society. They urge strongly on the members the importance of proceeding with the New Hall, the cost of getting up these magnificent displays being equal to the interest of the entire cost of a very large Hall."

It is but justice to give the names of the various ladies and gentlemen, whose valuable contributions made up so rare a treat to the citizens of Philadelphia and the numerous Horticulturists from a distance who were in attendance,—they form a list of enthusiastic cultivators of whom any Society might well be proud:

Daniel Curtin gard. for B J Leedom, James Astley gard. for Eden Hall, William Sutherland gard. for B Bullock, Thomas S Downing, Robert Salisbury gard. Jos Shipley, Richard Thatcher, F O'Keefe for John Heyl, Wm Fowler, Aaron Bombaugh, Gebhard Huster for M Bouvier, Charles Crucknell for C LeBoutillier, James Ritchie, D W Gross, G. H. Small, Thomas Meehan, S Greasley for David S Brown, Mrs. Mary R Potter, Samuel Thompson, Joseph R. Keim, David Robertson for M Baird, C P Hayes, George Williams, J Gray, Thomas Lloyd, Thomas Garrigues, Dr. J S Houghton, David W White, A W Harrison, J Huster, Charles Maffett for John Baird, P Weaver, John Kinnier, J Gœhring for J E Mitchell, S W Noble, Robert Scott, George Huster for Mr. Cummings, H C Brick, Mark Reeves for Gen. R Patterson, A L Pennock, jr., Dr. Elwyn, Charles Harmer, John McGowen, E. K. Tryon, Mrs. Hannah Robbins, R Buist, Garrett Smith, R Syng for William Camac, Mrs. E. Harris, Philip Bunting, Richard Norris, John Sherwood, Rev. J. Colder, L Chamberlain, Mrs. H Kraitser, D Rodney King, Charles Winfield for Thomas U Walters, Mrs. A Catherwood, H A Dreer, A W Holt, J D McQueen for J Longstreth, F F Merceron, C S Escher, J T Fuss for William Walters, S C Borden, Mrs. Williamson, John Gerney, Charles B Ott, S Macferran, William Parry, A L Felton, Wm Joyce for M W Baldwin, H Williamson, D C Hough, R Shute, E Satterthwait, Dr. F A Oppelt, E R Hibbert for Fairman Rogers, Peter Raabe, Samuel Baugh, E Williams, James McDonald, Benjamin Coates, W H Furness, Ellwanger & Barry, R M Marshall, Samuel McClure, Mrs. Phillips, Mr. Coates.

The Fruit-Growers' Society of Eastern Pennsylvania held a meeting at the same time in Philadelphia, but numerous engagements prevented our attendance to take notes for our readers.

INDEX—VOL. VII.

The Gardener's Monthly.

END OF VOL. VII.

End of Volume